

THE BUILT ENVIRONMENT AND HEALTH

11 Profiles of Neighborhood Transformation

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Prevention Institute is a nonprofit, national center dedicated to improving community health and well-being by building momentum for effective primary prevention. Primary prevention means taking action to build resilience and to prevent problems before they occur. The Institute's work is characterized by a strong commitment to community participation and promotion of equitable health outcomes among all social and economic groups. Since its founding in 1997, the organization has focused on injury and violence prevention, traffic safety, health disparities, nutrition and physical activity, and youth development. This, and other Prevention Institute documents, are available at no cost on our website.

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Foreword

In recent years the public health community has become increasingly aware that the design of the built environment can have a major impact on the health of the public. For example, one may expect more physical activity and healthier diets among persons in communities with convenient, safe walking paths and accessible sources of fresh fruits and vegetables. On the other hand, poorer health indicators may be expected among residents of communities with high crime rates, few parks or walking paths, numerous alcohol and tobacco outlets, and little access to fresh food.

In this monograph, the Prevention Institute has profiled eleven projects in predominantly low-income communities where local residents mobilized public and private resources to make changes in their physical environments to improve the health and quality of life for their citizens. Such changes included building a jogging path around a cemetery, transforming vacant lots into community gardens, reducing the prevalence of nuisance liquor stores, and creating attractive murals on walls where graffiti once reigned.

These case studies will help concerned citizens, urban planners, and public officials examine possibilities for local environmental changes that would improve the health of the residents of their communities.

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THE BUILT ENVIRONMENT AND HEALTH

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Introduction

*This is the last town in the world...
Before this came to be, there were
all the possibilities in the world.
There were all the opportunities for
starting with small things to create a
sweet new history and future.
If only we had seen them.*

BEN OKRI, A PRAYER FOR THE LIVING

There is growing recognition that the built environment—the physical structures and infrastructure of communities—plays a significant role in shaping our health. To a great extent, the connection between environment and health has centered on the results of human exposure to contaminated air, water, and soil. Decisions about land use, zoning, and community design influence the degree of human exposure to toxins, but also have implications for neighborhood access to healthy foods, and the level of safety and attractiveness of neighborhoods for activities such as walking and biking. The designated use, layout, and design of a community's physical structures including its housing, businesses, transportation systems, and recreational resources affect patterns of living (behaviors) that, in turn, influence health.

With support from the Centers for Disease Control and Prevention's National Center for Environmental Health, Prevention Institute crafted 11 profiles about communities across the country

The designated use, layout, and design of a community's physical structures including its housing, businesses, transportation systems, and recreational resources affect patterns of living (behaviors) that, in turn, influence health.

that reveal how the built environment can positively influence the health of community residents. These profiles were written to:

1. Describe the important connections between the built environment and health for practitioners in public health, city and regional planning, community economic development, and other related fields;
2. Support public health practitioners in looking beyond the traditional bounds of the healthcare system to address social and environmental determinants of health;
3. Suggest potential expanded roles for practitioners from diverse fields to promote health-enhancing improvements to the built environment;
4. Highlight a range of opportunities to create community-level change to the built environment through multi-sector partnerships with community residents, businesses, community organizations, and local government; and,
5. Provide concrete examples that demonstrate the importance of the built environment in promoting health.

Environmental factors contribute to disproportionately high incidences of negative health outcomes (cancer, asthma, injuries) in low-income communities which are often also beset with structural and institutional inequities. Disfranchised communities are more likely than wealthy communities to be the sites of hazards and,

BUILT ENVIRONMENT AND HEALTH: OVERVIEW OF PROFILES

The program profiles include: 1) a description of the geographic area and changes that were made; 2) the process required to implement the changes, including leadership and organizational collaboration; 3) any documented impacts, positive and negative; 4) lessons learned, framed as “wisdom from experience;” 5) supporting research that documents the connection between the built environment and health; and 6) next steps for action.

The program profiles tell the following stories:

1. Evergreen Cemetery Jogging Path: In the predominantly Latino, urban area of Boyle Heights, California in East Los Angeles, the Latino Urban Forum and neighborhood residents rally community-wide support to create a safe, 1.5 mile walking/jogging path. Community members previously had no access to parks or open space, but can now get physically active, in their own neighborhood.

2. Partners Through Food: In the Upper Falls community of Rochester, New York, a dynamic collaborative of community members increases access to healthy food by organizing for over five years to bring a full-service supermarket into a community which lacked a single grocery store.

3. Boston Lead-Safe Yard Project: An innovative partnership focusing on Roxbury and Dorchester in Boston, Massachusetts uses affordable techniques to minimize exposure to lead in inner-city yards—a contemporary environmental hazard linked to developmental disabilities and learning delays, particularly among children under six, living in older, urban homes.

4. Gardens for Growing Healthy Communities: A community/academic partnership transforms vacant lots into community gardens in urban neighborhoods throughout Denver, Colorado, creating and documenting new opportunities for physical activity, healthy eating and social connections among community residents, survivors of abuse and homeless people.

5. South Los Angeles Liquor Store Closures: Working to reduce violence and crime in South Los Angeles, California, this community-driven, grassroots effort organizes community residents to close neighborhood liquor stores that negatively impact community health and safety.

6. The Paterno Trivium: Community residents work collaboratively with city government to transform an unsafe traffic intersection into a neighborhood gathering spot and to improve the pedestrian environment on adjacent streets in Hudson Heights, New York City—an ethnically diverse, urban community.

7. The Fenway Alliance: A powerful coalition of 20 well-respected arts, culture and academic institutions revitalizes a cultural district by improving walkability through major infrastructure projects in Boston, Massachusetts. Although focused in a commercial district, their efforts demonstrate innovative roles for large-scale institutions in improving the built environment. Their work is focused on attracting African American and Latino pedestrians from nearby schools and communities.

8. Westside Project: With an eye toward improving the built environment, a collaborative of local government agencies, including the public health department, work to build community support and trust before building pedestrian amenities for residents in Stamford, Connecticut who had become wary after a history of displacement and gentrification.

9. The Seattle Department of Transportation: This citywide department pays special attention to achieving equity across geographic and economic boundaries while working to create an integrated network of pedestrian and bicycle infrastructure that promotes safe physical activity for residents throughout Seattle, Washington.

10. The Wray Health Initiative: In the rural town of Wray, Colorado a coalition builds a neighborhood walking path, basketball court and other features to make fitness fun for people of all ages by soliciting community buy-in and creating social support for activity.

11. Philadelphia Mural Arts Program: Utilizing a grassroots model, this effort engages community members, including ex-gang members, in the creation and painting of murals that improve aesthetics and transform neighborhoods in urban, economically disenfranchised communities throughout Philadelphia, Pennsylvania.

at the same time, often lack the infrastructure to support physical activity and healthy eating. Too many residents live in community environments that promote disease and injury and do not support healthy behaviors that can help them avoid major chronic diseases that result from sedentary lifestyles and poor nutrition (e.g., heart disease and stroke). Many people live in neighborhoods that are over-saturated with alcohol outlets and advertisements, lack grocery stores, have sidewalks in disrepair, have little access to open space, and have dangerously high traffic speeds.

Further, compared to residents of middle-class communities, residents of low-income neighborhoods—struggling with the presence of environmental hazards, crumbling infrastructure, and a lack of economic resources—face even more barriers to overcoming them. They often need to implement change in the face of inadequate transportation, fewer businesses in the neighborhood to support them, institutional barriers to neighborhood investment, and lack of influence within the local government. In addition, people's previous experiences of housing cost increases and gentrification may create a realistic concern that enhancing the neighborhood could result in unintended strain and disruption to the community.

However, the physical environment can promote health directly through access to clean air and water and can influence people's behavior by facilitating health-promoting activities, such as walking, biking, and healthy eating. Changes to the built environment can have a positive impact on many health-related issues, from diabetes and asthma to traffic safety and community violence. In many cases, a change to the built environment will simultaneously impact multiple health conditions. To date, most published examples of improvements to the built environment have occurred in middle- and upper-class communities of predominantly White residents.

A good solution solves multiple problems: Changes to the built environment can have a positive impact on many health-related issues, from diabetes and asthma, to traffic safety and community violence. In many cases, a change to the built environment will simultaneously impact multiple health conditions.

In choosing these 11 profiles, we focus primarily on improvements in communities where the mean resident income is low and where concentrations of African American and Latino residents are high. We highlight how improvements to the built environment can enhance the health and well-being of members of these communities. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have historically

lacked important features such as well-maintained pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

In compiling these profiles, several themes emerged about how communities are able to overcome challenges and succeed.

- Broad, diverse participation is necessary to mobilize the resources and build the will to make community improvements.
- Efforts to create health-promoting environments provide opportunities to build community resilience and marshal community assets, rather than the more typical focus on risk factors.
- Persistence and innovation are common qualities of the organizers and organizing efforts that successfully brought about improvements to the built environment.
- Engaging communities to focus on changing the policies and practices of local organizations and institutions is part of an effective strategy for improving health and leaving behind lasting changes in neighborhoods.
- Focusing on the built environment fits well with other public health approaches that a) recognize that changing individual behavior involves changing social norms and environmental determinants of health and b) concentrate on the community as the unit of analysis and action.

- While making built environment changes may be necessary, they are not sufficient. As the profiles of the Wray Health Initiative in Wray, Colorado and the Westside Project in Stamford, Connecticut illustrate, improvements to the physical environment are significant components of a multifaceted strategy for promoting health that includes community education, increasing social capital and enhancing social support.

Over the past decade, more and more communities have emphasized the importance of making design decisions in the context of the overall community. The term “smart growth” refers to a land development strategy aimed at managing the growth of a community, minimizing automobile transportation dependence, and improving the efficiency of infrastructure investments. While “smart growth” initiatives have brought attention to the need to manage new growth and development effectively, *Built Environment and Health: 11 Profiles*, calls attention to the value of neighborhood-level changes within existing structures. Many low-income urban environments suffering from disinvestments and decay already have the skeleton of a walkable community and possess great potential. Practices as simple and routine as road repavement are opportunities for neighborhood enhancement. One road at a time, more space can be created for bicycles and pedestrians, and routes can be narrowed and altered to promote “traffic calming,” (i.e., decreasing vehicular speed, and increasing safety). These profiles demonstrate that small and incremental changes are opportunities to design solutions that suit unique neighborhood environments and are significant contributions toward improving health and quality of life locally. These changes offer substantial enhancements for the affected residents, and build momentum for further improvements.

In identifying profiles, a key goal was to highlight initiatives that clearly demonstrate linkages between environmental changes and changes in health behaviors

and outcomes. However, such projects are few and our selected efforts are not thoroughly evaluated. Documenting the health impact of environmental change efforts remains a challenge for a host of reasons. Communities generally are not collecting the quality and quantity of data needed to demonstrate impact. Some built environment initiatives are not explicitly designed with health outcomes in mind, and therefore health-related information may not be collected. Furthermore, multi-year surveillance of changes in population health status is often beyond the scale or resource capacity of localities. Therefore, to improve the evaluation of future initiatives it may be appropriate for local evaluation to focus on documenting changes in behavior. For example, a community can assess changes in rates of walking among residents in a manner that can be coordinated with national efforts examining changes in the rate of health conditions such as obesity and heart disease.

In cases where documenting behavior change is beyond an initiative’s scope or capacity, evaluation can focus on documenting the environmental change that occurred. With nationally supported evidence demonstrating that a specific environmental change at the community level yields a positive health outcome, communities can focus on implementing and documenting the particular environmental change, rather than attempt to document the expected behavior change. Toward this end, further investment in thorough case studies to evaluate the impact of some interventions, like those profiled in this report, may be warranted.

The powerful influence of the built environment on health suggests that public health practitioners should be involved in planning and policy decisions related to land use, zoning and community design. Health practitioners can serve an essential role in collaborating with other professionals and working alongside neighborhood residents to create and promote healthy communities. Their participation becomes imperative as the conviction grows that addressing the social and

The powerful influence of the built environment on health suggests that public health practitioners should be involved in planning and policy decisions related to land use, zoning and community design.

physical environment is an essential element of a strategy to encourage healthy behaviors. Thus, a new role for public health leadership is emerging. In this emerging role, practitioners need to engage in three principal areas of action. The first is to assess the health impact of land use and community design options before decisions are made as well as after improvements are implemented. The second is to catalyze and facilitate inclusive partnerships with membership that stretches far beyond traditional health fields to plan new structures and redesign existing ones. Third, public health practitioners need to participate in policy-making on issues related to the built environment to ensure protection from toxins, access to healthy food outlets, places to walk and recreate, and other health-promoting environments.

While Prevention Institute was successful at documenting compelling profiles, we also found critical needs and unfulfilled opportunities in communities throughout the country where health and quality of life could be improved through changes to the built environment. Our hope is that the profiles that follow will stimulate and inspire practitioners from multiple fields and sectors to partner with community residents, design solutions, and take action to improve the built environment for the health and well-being of all.

BOYLE HEIGHTS, CALIFORNIA

The Latino Urban Forum and residents of Boyle Heights create the Evergreen Cemetery Jogging Path to promote a safe, pedestrian-friendly environment



The city map of Boyle Heights, CA shows only two kinds of open spaces: freeway on- and off-ramps and a cemetery. But this didn't stop community organizers from creating an outdoor fitness area that promotes health by encouraging physical activity. With the help of the Latino Urban Forum, residents transformed a cracked sidewalk that ringed the Evergreen Cemetery into a 1.5 mile rubberized jogging path. The Evergreen Jogging Path Coalition (EJPC) worked intensively with city officials, emphasizing the need for capital improvements in the area, designing careful plans and securing materials. Six months later, in June 2003, the new path was in use, not only by Boyle Heights residents but also by people from neighboring communities.

THE PLACE

Boyle Heights, CA is a small, densely populated urban community east of downtown Los Angeles. Seventy-five percent of the city's 91,000 residents (US Census, 2000) were born outside of the US in Mexico or elsewhere in Latin America (LA Department of City Planning), and most primarily speak Spanish or are bilingual. Residents' median income was just under \$21,500 in 2000 (US Census). Designated as a redevelopment zone at the city, state, and federal levels, Boyle Heights was eligible for funding through

With no nearby parks available, exercise-minded Boyle Heights residents did laps around a cemetery, but the sidewalks' poor condition made the route increasingly more treacherous over time, creating a barrier to health-promoting activity.

the City of Los Angeles Redevelopment Zone, California State Enterprise Zone, and Federal Empowerment Zone projects.

THE PROJECT

With no nearby parks available, exercise-minded Boyle Heights residents looking to walk or jog in the neighborhood did laps around a cemetery. The centrally located Evergreen Cemetery provided a convenient location, but the sidewalks' poor condition made the route increasingly more treacherous over time, creating a barrier to health-promoting activity. "I watched it get worse and worse because the roots were pulling up the sidewalk, and they were getting cracked and more and more unsafe," says resident Diana Terrango, who had been walking around the cemetery for 20 years. "Then I went out to Pasadena and saw that they had a jogging path going through their neighborhood and thought it was a wonderful idea." Terrango

shared her idea with James Rojas, co-founder of the Latino Urban Forum, and he got the ball rolling.

The fact that Boyle Heights community members had been politically active in the past helped get the idea off the ground quickly. Terrango, Rojas and several leaders approached Los Angeles City Councilmember Nick Pacheco, who agreed to support the



**BEFORE: CRACKED SIDEWALKS MADE WALKING AND RUNNING A TREACHEROUS EXPERIENCE.
AFTER: A RUBBERIZED PATH SMOOTHES THE WAY FOR JOGGERS AND STROLLING FAMILIES.**

plan if the community did. The newly formed EJPC presented their plan at community meetings and neighbors loved the idea. Community advocate George Magallanes credits Rojas' experience with organizing for the plan's quick success: "James was the key to making it happen. He talked about his research and experience with open spaces and how to make them useful to the community."

With community support behind them, the EJPC began to formalize their plan. They documented the conditions of the sidewalk:

- holes that measured "half a foot deep or more,"
- "root systems that have caused the sidewalk to buckle,"
- "a ½ foot gully" caused by weeds and erosion,
- trash strewn along adjacent dirt paths, and
- "few pedestrian crosswalks" or traffic stops on perimeter streets to protect pedestrians using the space.

Rather than replace the sidewalks with new cement, the group decided to pursue construction of a rubberized path. As manager for sustainability programs at the Department of Public Works, Lupe Vela was in charge of keeping the Bureau of Street Services on track to keep the project moving forward. "I was pushing to have recycled, rubberized asphalt that was high quality and would stand the test of time," said Vela. "Because the area would be functioning like a track, but was not protected, the material had to be sturdy enough to withstand people walking on it with high

heels. We wanted to make sure everyone could walk on it safely."

The next time the EJPC met with Pacheco they brought a clear statement about the problems along with proposed solutions. "James has a way of coming up with ideas and giving people the power to turn them into reality," says Magallanes. "He never comes to a politician and says, 'You're not doing a good job'. It's easy to say you're not doing enough, but coming up with an idea that is good for the community is harder."

Encouraged by community support for the project, Councilmember Pacheco secured \$800,000 from the County Department of Parks and Recreation to build a continuous, rubberized jogging path that would be safe and comfortable for pedestrians and joggers. This path became the first public sidewalk in the country to be designated a recreational public space.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Alliances between residents, community activists, and government agencies allowed for the swift, definitive action that brought the jogging path from idea to reality in a mere six months. Rojas teamed with EJPC members including Terrango, Nadine Diaz and Ullyses Sanchez, to collect data and conduct meetings with Councilmember Pacheco, who helped raise the necessary funds from Department of Parks and Recreation

to complete the project. Vela helped keep the project on track. The Metropolitan Transit Authority, the City Council, and residents provided in-kind resources and money to clean and maintain the path.

THE RESULTS

Healthy Change in Local Environments

The EJPC's collaborative efforts demonstrate that even where open space is limited existing sidewalks can provide space for recreational physical activity. Since the path was built, daily use has increased from about 200 to more than 1,000 people who use the path for jogging, walking, and socializing, says Rojas. He emphasizes the importance of building an exercise and social resource within the community. "It gives the residents a stronger sense of identity and a real sense of pride—now everyone points it out," he says.

Magallanes agrees: "The EJPC has changed the face of Evergreen. Small things like the jogging path make a huge difference in how community residents see themselves and the community. The crime rate—I won't say it's disappeared, but I think it has really gone down because people have a lot more ownership. I see senior citizens with walkers and a lot of families walking. It might be a dad jogging and a mom pushing a stroller or a mom jogging and dad riding on a bike



WIDE STREETS AND HEAVY TRAFFIC FLOW SURROUNDING THE EVERGREEN JOGGING PATH CAN MAKE CROSSING A DAUNTING TASK FOR PEDESTRIANS.

alongside with a baby basket in the back. I've had people tell me that their doctors have told them to walk on this jogging path because it is a good place to exercise and the soft rubber is easy on their knees and backs."

The health benefits of regular physical activity are clear, and research shows that easy access to a safe place to exercise promotes fitness. Both access to walking/jogging paths and perceived safety of the paths are positively associated with physical activity behaviors.¹ In particular, proximity to places for physical activity within the neighborhoods promotes activity.² Studies using subjective (self-report) and objective (Geographic Information Systems) measures of proximity both indicate that nearness to walking paths appears to have a significant impact on physical activity for adults.

As Dr. Richard Jackson, former director of Centers for Disease Control and Prevention's National Center for Environmental Health states, "It's dishonest to tell people to walk, jog, or bicycle when there is not a safe or welcoming place to pursue these 'life-saving' activities."³ Instead of being defeated by the limited open green space in their community, Boyle Heights residents marshalled community resources to improve health by improving access to, and availability of, safer walking routes.

WISDOM FROM EXPERIENCE

Reflecting on the project's success, Rojas appreciates the significance of the first steps involved in community transformation. "Start with observation," advises Rojas. "How is the community operating? What are its shortfalls? What are the needs? And then use creativity to envision solutions." Next comes the action phase, says Rojas. "We had to conduct a lot of meetings, get the 'man' power, collect data, do research and get a handle on where the money was." The assessing, envisioning and mobilizing that occurred at the project's initial phases made a substantial difference in the final result.

LOOKING AHEAD

The Evergreen Jogging Path has become a catalyst for further community change, spurring new efforts specifically geared toward seniors. Walkable Neighborhoods for Seniors, a project of the California Center for Physical Activity, is funding the Los Angeles County Department of Health Services' Injury and Violence Prevention Program (IVPP) to explore safety for Boyle Heights seniors, conduct walkability audits to identify potential danger zones for pedestrians on and near the path and to develop solutions. The program has paid particular attention to Evergreen Cemetery as a pedestrian magnet with community buy-in and support. Today, community members hope to create safe routes to and from the jogging path. Based on walkability audits and injury/collision data provided by the county, Safe and Healthy Communities Consulting (SHCC) is helping to identify current barriers to walking and proposing potential design solutions. By documenting findings and providing recommendations on pedestrian hot spots, SHCC will provide research that the community can use to apply for future funding to implement solutions.

Now that the jogging path is in place and in regular use, EJPC organizers say the challenge is keeping it clean. Once every two months, community members come together for a regularly-scheduled clean-up day. Though funding from the City Council helps and the Metropolitan Transit Authority provides money, time, and resources (including personnel, trash bags and brooms), some EJPC members think the city should take more responsibility for keeping the path clean. "I often think that when we first had meetings, we should have gotten something in writing to keep it clean," says Terrango. In the future, some organizers hope the path will develop to include public art installations and more native plants along the loop.

By pulling together the various skills, experiences and resources of Boyle Heights residents, community activists, and government

agencies, the EJPC took advantage of what limited open space was available in the neighborhood to create a fitness-promoting resource for the whole community.

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ENDNOTES

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This is one in a series of 11 profiles that reveal how improvements to the built environment can positively influence the health of community residents. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have historically lacked important features such as pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

The profiles were written and produced by Prevention Institute. Funding and guidance were provided by the Centers for Disease Control and Prevention's National Center for Environmental Health. It is our hope that these profiles will stimulate and inspire partnerships between community residents and practitioners from multiple fields and sectors to design solutions and take action to improve the built environment for the health and well-being of all.

Because the area would be functioning like a track, but was not protected, the material had to be sturdy enough to withstand people walking on it with high heels. It had to be safe and functional.

ROCHESTER, NEW YORK

Partners Through Food increases access to healthy food by bringing a full-service supermarket into the community

When a fire destroyed the only grocery store in town, Upper Falls, NY residents had no local access to affordable, fresh foods. Those who could traveled miles to the nearest suburban supermarket, but the added time and travel costs strained many residents. Recognizing the injustice of living in a community with such limited food options, residents and activists collaborated with local government officials to lobby for a new supermarket. After five years of tireless efforts and shifting strategies, the community group Partners Through Food convinced TOPS, a major grocery chain, to bring a shopping plaza and full-service supermarket to the neighborhood. The new shopping plaza opened in 1997 and since then residents say the retail area has transformed the neighborhood. Now they have easy access to affordable, healthy foods which research suggests encourages more nutritious eating.

THE PLACE

Rochester, NY is a city with 219,773 residents. The Upper Falls community is located in the northeast quadrant of the city, and is home to 5,000 residents, the majority of whom are African American and Puerto Rican, according to the 2000 US Census. From 1994 to 1996, the volume of food stamps distributed in the three zip codes surrounding the Upper Falls supermarket site totaled approximately \$24 million, reflecting high rates of low-income residents. Because of

In the spring of 1994, about 30 people stormed the City Council with paper bags full of apples, beans and collard greens, shouting: "Apples, Beans and Collard Greens!" This event led Mayor William Johnson to get involved in bringing the community a full-service market.

these numbers, the federal Department of Housing and Urban Development has designated the City of Rochester an Enterprise Community, making public funds available for redevelopment.

THE PROJECT

During the 1980's, the number of supermarkets in the Rochester metropolitan area dropped steadily from 42 in 1970 to a meager 8 by 1995.¹ With only eight supermarkets to serve Rochester's residents, access to affordable, healthy food options had become severely limited. When the last supermarket in Upper Falls burned down in the spring of 1992, it was the final straw. After the fire, residents who wished to shop at supermarkets rather than high-priced, low-variety convenience stores were forced to travel long distances to outlying suburbs. Increased grocery shopping travel times and transportation costs burdened low-income residents, many of whom made their purchases with food stamps.

Frustrated that the fire had destroyed their only option for affordable, healthy food, Upper Falls residents started meeting in 1992 to brainstorm solutions. "There was a core group that started the ball rolling and then after an early series of meetings we began to reach out to the community to learn about the interests of neighborhood residents," said Hank Herrera, who took on a lead organizing role.



BEFORE CITIZENS ORGANIZED, THE BUILDING WAS AN ABANDONED STORE FRONT. NOW, RESIDENTS HAVE A FULL-SERVICE SUPERMARKET RIGHT IN THEIR NEIGHBORHOOD.

They quickly decided that opening a local co-operative market was not feasible because of the resources needed and the lack of variety that such a store could realistically offer. “What we learned early on was that people wanted a full service supermarket. Basically, they said, we want a market that looks like the suburban supermarket. We’re as good as the people in the suburbs and we deserve a store that will meet all of our shopping needs and look good, too.”

So the group began to explore different options for bringing a supermarket back to the site where the old one had burned down. At the time, two groups were independently working to bring a grocery store to the same site, the Grocery Group and the Community Development Block Grant Coalition whose job it was to ensure that community development block grant monies were being spent appropriately. Soon, the two groups joined forces, merging into Partners Through Food. Made up primarily of concerned community residents, the group also included activists. Eventually, representatives from the planning departments of the City of Rochester and Monroe County began attending.

Partners Through Food decided to do research that would demonstrate the need for a supermarket. “We began checking license plate numbers in the parking lots at the suburban supermarkets and following up to see where those license plates were registered,” said Herrera. “We could see people were coming from our zip code. We also got data from the Monroe County Department of Social Services and found that food

stamps were issued and used outside of the community in the suburban stores to the tune of \$17 to \$18 million originating from the zip codes right around the proposed store site.”

Meanwhile, others began to consider building on the proposed supermarket site. One developer planned to take over the area to expand a social service agency called Action for a Better Community (ABC). When Partners Through Food expressed their concerns, the developer responded: “Face reality, there will *never* be a supermarket on that corner,” Herrera recalled. Residents were furious. And in the spring of 1994, about 30 people stormed the City Council with paper bags full of apples, beans and collard greens shouting: “Apples, Beans and Collard Greens! We don’t want no ABC!” They dumped the food in front of the building. This event led Mayor William Johnson to get involved. He sided with the people, making a commitment to help bring the store to the area. By collaborating with the mayor, Partners Through Food was finally able to make progress. “The developer had bought the building for \$300,000, but the building process stopped cold because the people didn’t want it,” Herrera explained.

The group approached the major grocery chains with the research data they had accumulated. But despite what they thought were compelling numbers, the stores expressed concern that they couldn’t make enough money in this area. “That baffled us,” recalled Herrera. Finally, TOPS, a multinational retail supermar-

ket corporation, expressed interest. “I think what it finally came down to was that a major supermarket chain that competes with TOPS began to move into their market territory,” he said. So behind closed doors, the mayor and TOPS began to negotiate.

The supermarket chain agreed to build four new stores and expand an existing store to serve area residents. TOPS invested the \$28 million needed to open the supermarket and the city agreed to contribute public money to the project.² Public funds came through the Federal Enterprise Community Zone program, the Community Development Block Grant, the Urban Renewal Trust Fund, and the HUD 108 program.³ This money contributed to the construction of an entire shopping plaza around the supermarket, including a new police station, retail stores, and a medical office.

Six years after residents first rallied, a new supermarket opened in the plaza that had previously been run-down and abandoned. “Now, all the stores are occupied,” said Herrera. “TOPS is there, it has a very nice appearance.”

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Partners Through Food developed when two independent groups united around a common goal: to bring a supermarket to the area. The merged group included concerned Upper Falls residents, activists, funders, people from the faith community, and representatives from the planning departments of the City of Rochester and Monroe County. Local organizations including the Coalition of Northeast Associations, the Regional Food Bank and St. Bridget’s Church were instrumental throughout the entire process of lobbying for the market.

By hosting community meetings and leading lobbying efforts aimed at city government, Partners

“We also got data from the Monroe County Department of Social Services and found that food stamps were issued and used outside of the community in the suburban stores to the tune of \$17 to \$18 million.”

Through Food played a vital role as a community leader and convener. Members led outreach and education initiatives and coordinated community meetings, often held at St. Bridget’s church, which donated space and time for meetings. The Coalition of Northeast Associations and Regional Food Bank served as valuable community partners to engage residents in

community meetings and to build political clout for the effort, which was critical for obtaining the buy-in of city government. With such noticeable, established partners, Mayor Johnson committed himself to the cause and played a crucial role in initiating negotiations with TOPS, the Buffalo-based grocery chain that eventually partnered with the city to bring a store to the Upper Falls neighborhood as part of a five-store, citywide effort.

THE RESULTS

Healthy Change in Local Environments

The new supermarket and shopping plaza have greatly enhanced the quality of life of the Upper Falls community. The development is beautiful, said Herrera. “Life was there again. It transformed the neighborhood.” The store is thriving, and neighborhood residents—rather than needing to drive—now have a store within walking distance that offers a wide variety of food options. The city continues to encourage residents to shop at the new store by conducting community outreach efforts on behalf of the store, improving public safety by reassigning a police station to the area and including several service agencies such as banks in the mall where the store is located.⁴

The neighborhood has also benefited from additional employment opportunities presented by the retail stores. During negotiations with TOPS, Partners Through Food insisted the store hire a percentage of people from the neighborhood. “To my knowledge they have been true to that in all the time they’ve been here,” said Herrera.

Although a health-impact evaluation of this particular project has not yet been done, published studies document the health benefits of supermarket access. Emerging research suggests that introducing supermarkets into urban, low-income communities can improve dietary behaviors. A landmark 2002 study based on over 10,000 residents in 221 census tracts (Maryland, North Carolina, Mississippi, Minnesota) by Morland et al. found that the local food environment was associated with residents' dietary intakes.⁵ The authors found that African American residents increased their fruit and vegetable intake by an average of 32% for each supermarket in their census tract. Although 73% of African American residents had small neighborhood grocery stores in their neighborhoods, the presence of these establishments had little association with meeting recommended dietary intake.

An evaluation study conducted in the United Kingdom examined the link between introducing a supermarket into a food-retail deprived community and improvements in dietary behavior.⁶ The study used fresh fruit and vegetable consumption as proxy measures for healthy diets before and after the introduction of a large chain supermarket in the community. A significant increase was noted in participants with the poorest "before" diets; 75% increased their fruit and vegetable consumption after the supermarket opened, doubling their mean weekly fruit and vegetable portions. These same participants also switched their main source of fruit and vegetable purchasing from limited-range/budget stores in the "before" period to the new supermarket. These preliminary results indicate that opening a supermarket may produce positive benefits for the diets of the most nutritionally at risk.

It was only with community support and perseverance that the Upper Falls community was able to create the type of change to the built environment that would ensure access to healthy food and services for community residents.

mended Herrera. This effort required the buy-in and support of city government and a major grocery chain. The support and resources of numerous community groups helped build momentum, provided the impetus for political involvement, and provided businesses with a market incentive to collaborate. "Stress the enormous amount of money and food

stamps spent on food that is lost to other neighborhoods as a way to demonstrate the value of investing in the community." In the end, it was only with community support and perseverance that the Upper Falls community was able to create the type of change to the built environment that would ensure access to healthy food and services for community residents.

LOOKING AHEAD

Today the TOPS Corporation is using the success of the Upper Falls supermarket as a model of how business can contribute to urban redevelopment. The supermarket provides the community with higher quality food at lower prices than previous smaller stores could offer and always offers a steady supply of fresh meat and produce. The newly developed plaza has transformed the neighborhood and reconfigured the way people see that area.

"It wouldn't have happened except for the fact that people worked to make it happen," said Herrera. "Every time I go by that corner, I remember people saying 'face reality' and I smile. This is our reality."

WISDOM FROM EXPERIENCE

"When working to affect community-level change, recognize your limits and seek support, resources, and funding from key partners," recom-

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This is one in a series of 11 profiles that reveal how improvements to the built environment can positively influence the health of community residents. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have historically lacked important features such as pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

The profiles were written and produced by Prevention Institute. Funding and guidance were provided by the Centers for Disease Control and Prevention's National Center for Environmental Health. It is our hope that these profiles will stimulate and inspire partnerships between community residents and practitioners from multiple fields and sectors to design solutions and take action to improve the built environment for the health and well-being of all.

BOSTON, MASSACHUSETTS

Boston Lead-Safe Yard Project uses affordable techniques to mitigate exposure to lead in inner-city yards

In the heart of Boston's "lead belt," children playing in their own yards are unwittingly exposed to lead in amounts that could result in developmental delays, learning disabilities, or behavioral disorders. While achievements in the removal of lead from paint and gasoline have been an extraordinary public health success story, lead-contaminated soil that surrounds older homes remains a significant source of lead exposure that has not yet received widespread attention. A pilot project of the US Environmental Protection Agency's (EPA) Environmental Monitoring for Public Access and Community Tracking (EMPACT) program is working to change that with a project called the Boston Lead-Safe Yard Project (LSYP).

"Outreach was difficult at first. We searched for unique ways such as a model yard, signs and advertising."

The Boston LSYP team uses low-cost landscaping techniques to reduce lead contamination in the Boston metropolitan area. In addition, the project informs residents about the risks of lead exposure among children and provides timely data on lead levels in soil.

The Boston LSYP has raised awareness about lead dangers and helps individuals, community organizers, and local government mitigate the risks of lead poisoning from residential soil in neighboring communities.

THE PLACE

Boston properties typically have soil lead levels well in excess of EPA standards, both in play areas and along house foundations. Elevated lead levels in soil result primarily from the chipping and peeling of exterior lead paint and also from leaded gasoline. Although many Boston houses have been de-leaded, few yards have undergone soil lead abatement for several reasons: the cost of full-scale removal of soil has historically been prohibitive to both families and the city (\$6,000 to \$10,000 for a typical triple-decker property); public funding has not been available; and the dangers of elevated lead levels in soil are not widely recognized.

When EMPACT program investigators went looking for a spot to launch the Lead-Safe Yard Project, two areas in Boston's "lead belt" stood out. The initial target community selected for the pilot project was a several block area in the Bowdoin Street neighborhood, consisting of approximately 150 mostly older, wood-



LEAD EXPOSURE FROM SOIL REMAINS A PROBLEM FOR RESIDENTS OF BOSTON'S OLDER HOMES.

framed houses in the North Dorchester section of Boston. Efforts later expanded into Roxbury, another high-risk, low-income area that also contained a lot of old homes whose chipping paint contributed to unhealthy lead levels in the soil of surrounding yards. Both neighborhoods were chosen because they had:

- high incidences of lead poisoning,
- large concentrations of older wood homes (most built before 1978) that had been painted with lead-based paint,
- a large low-income, multi-racial and immigrant population,
- contiguous yards that increased the potential for neighborhood-wide impact,
- a local community environmental health organization, and
- a history of established neighborhood environmental activities upon which the EMPACT project could build.

THE PROJECT

It is well established that exposure to lead during early developmental years is one of the most significant environmental health concerns for inner-city youth,¹ especially for those who live in poorly maintained housing in older urban neighborhoods. According to the Centers for Disease Control and Prevention, one in every four to six children may have elevated lead levels in inner cities, based on current blood lead data. The link between learning disabilities and elevated blood lead levels in preschool children is also well documented, particularly for those under the age of six. Lead poisoning is more prevalent in low-income, minority, and immigrant communities and is compounded by additional environmental hazards such as indoor air contaminants, deteriorating infrastructures, housing demolition, abandoned housing, congested roadways, industrial land uses, and vacant land.

H. Patricia Hynes, a professor of Environmental Health at Boston

While achievements in the removal of lead from paint and gasoline have been an extraordinary public health success story, lead-contaminated soil that surrounds older homes remains a significant source of lead exposure.



BOSTON'S LEAD-SAFE YARD PROJECT USED LOW-COST TECHNIQUES LIKE GROUNDCOVER TO REDUCE RESIDENTIAL LEAD EXPOSURE.

University, School of Public Health and the co-director of the Boston LYSP team, is committed to using community-based participatory approaches to eliminating the hazardous conditions related to lead that disproportionately exist in older, low-income housing. The team's research is action-oriented, pairing the root of the problem with solutions that are practical and applicable for community members. The Boston LSYP team documents the presence of serious environmental lead contamination in a timely fashion and presents solutions that the community can use. When project investigators found that high levels of lead in soil and heavily traveled roadways are a significant contributor to lead exposure and poisoning among Boston area residents, they wanted to develop affordable ways to mitigate lead exposure to improve the health and well-being of community members. In conjunction with residents

and community-based institutions, the Boston LSYP developed a series of low-cost, low-technology measures to reduce exposure to lead contaminated soil.

From 1998 to 2001, the project conducted a multi-phase lead-safe yard intervention which included: a) outreach to, and education of, homeowners, b) soil analysis to establish baseline lead levels, c)



STONE OR BRICK PATHS ARE AN IMPORTANT EPA-RECOMMENDED LEAD ABATEMENT STRATEGY.

development and application of cost-effective landscaping measures to reduce exposure to high lead soil, d) communication with homeowners about design decisions and long-term maintenance, and e) dissemination of project methods to community agencies, local government, and others to encourage program replication.

“Outreach was difficult at first,” said Hynes. “It was hard to attract families into the program. We searched for unique ways such as a model yard, signs, and advertising.” Community partners were hired to conduct outreach to neighbors and community residents through mass mailings, phone calls, door-to-door solicitations, and distribution of lead-safe yard literature at community events. Education materials included culturally appropriate printed materials, a video produced by the Boston Childhood Lead Poisoning Prevention Program, and a quiz to test parents’ knowledge about lead.

Once participants agreed to enroll in the project, outreach staff provided education and coordinated the soil analysis with project team members. A chemist from EPA’s Region 1 Lab and a certified industrial hygienist from the Bowdoin Street Community Health Center in Dorchester analyzed more than 100 yards, testing soil in

From chemists to contractors, the Boston LSYP rallied a range of diverse partners around a singular cause: reducing the risk of lead contamination.

areas most likely to present sources of lead contamination. A member of the landscape crew then presented the results to homeowners and together they developed a treatment plan tailored to each particular home. A standardized questionnaire documented how the yard was being used, household characteristics, and availability of the homeowner. Landscapers incorporated this information into their recommendations for treatment, creating a “blueprint” for each yard. Homeowners participated in every part of the process.

Using EPA recommendations for residential lead-contaminated soil abatement, the project developed a suite of options that emphasized affordability and replicability. The most common soil remediation techniques included installation of wood framed boxes (to separate food items and play areas from contaminated soil), relocation of fruit/vegetable gardens and children’s play areas, laying stone paths, planting grass, applying landscape cloth, or bringing in groundcover (such as mulches or wood chips to fill-in and reduce direct exposure to leaded soil).

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

From chemists to contractors, the Boston LSYP rallied diverse partners around a single cause: reducing the risk of lead contamination. The project brought together community residents and organizations, local businesses, a neighborhood health center, the Department of Public Health, a housing agency, Boston University School of Public Health, and EPA Region 1.

While the Boston University School of Public Health oversaw outreach and education and coordinated the development of the lead removal toolkit, a chemist from EPA’s New England Regional Laboratory conducted soil analysis. The Dudley Street Neighborhood Initiative and local landscape contractors—including Garden Futures and Dorchester Gardenlands Preserve

—participated in outreach and yard renovation, and the Bowdoin Street Community Health Center provided a certified industrial hygienist to assist in residential soil analysis. As the project progressed, it expanded to include two city agencies: Boston’s Childhood Lead Poisoning Prevention Program and Lead-Safe Boston, and the National Center for Healthy Housing, which conducted the evaluation in the project’s final phase. Engaging a wide variety of partners lent the project a great deal of organizational support and allowed the work to become institutionalized within city health and housing agencies once the pilot phase ended.

The EPA’s EMPACT program provided the funding, while local businesses provided materials donations.

This project has successfully reduced one of the most significant environmental health concerns for inner-city youth. After one year, soil treatments continued to prevent exposure to leaded soil in all properties.

THE RESULTS

Healthy Change in Local Environments

Between the summer of 1998 and the fall of 2001, the Boston LSYP completed 61 lead-safe yards, the city health department treated an additional six yards, and Lead-Safe Boston completed 22 lead-safe yards. By decreasing children’s exposure to lead, this project has successfully reduced one of the most significant environmental health concerns for inner-city youth. After one year, soil treatments continued to prevent exposure to leaded soil in the properties concerned, according to an evaluation managed by the National Center for Healthy Housing. All three measures of treatment effectiveness (surface measurements, dust lead levels on exterior floor mats, and floor dust lead levels) showed statistically significant reductions in lead levels for properties enrolled in 2000.

The project demonstrated several important results.

1) Lead contaminated soil can be mitigated at a fraction of the cost of conventional methods in ways that increase the ability of residents, community health centers, and others to have a positive impact on their neighborhoods.

2) Government agencies, universities, residents, and community-based organizations can work together effectively to reduce lead exposures from soil.

3) A lead-safe yard program can be replicated and institutionalized by municipal home de-leading programs and other community organizations.

Removing lead from inner-city soil or reducing exposure to contaminated soil has typically been too expensive or technologically challenging for residents to undertake. But the Boston LSYP has demonstrated techniques that low-income households can utilize at low costs. To assist other groups to replicate their efforts, project leaders created a toolbox, available at: www.epa.gov/region01/leadsafe/tool2.html.

The evaluation of this project reflects what health improvements research has demonstrated in other regions. For example, a major EPA intervention study found that when soil is a significant source of lead in a child’s environment, lead abatement in soil will result in reduced exposure and consequently a reduction in blood lead levels.² The EPA research team found that a soil reduction of 2,060 ppm was associated with a 2.25 to 2.70 µg/dl decline in blood lead levels.³ Other research estimating that interior house dust is comprised of anywhere from 30% to 50% of soil dust further reveals the health importance of soil lead abatement programs.⁴

By tackling lead contamination yard by yard, the Boston LSYP has made significant strides toward promoting community health within the city’s “lead belt,” and has provided a model other communities can follow.

WISDOM FROM EXPERIENCE

Cost was a crucial factor in determining yard treatment recommendations. For example, off-site removal and disposal of soil was not feasible because of high costs and logistical barriers. Unfortunately, despite creative treatment solutions, the project operated over budget. Even with donations of free gravel, wood



MULCHES AND GROUND COVER REDUCE EXPOSURE TO LEADED SOIL IN RESIDENTIAL YARDS.

chips, and compost by a local company, the average per yard cost far exceeded the project's goal of \$750, and cost approximately \$2,100 per yard. The breakdown of costs included \$300 for materials, and \$1,800 for landscape and construction labor. Project management added about \$900 per yard to the overall cost. However, despite these cost issues and the fact that the team was not able to meet their ambitious goal of \$750 per yard, the personal, social and economic costs of the damage from lead poisoning far exceed the expenditures. Not only is the project ensuring the health and safety of current community members, but it is protecting that of future members as well, saving money across the board.

Hynes shared some of her observations about the project: "Hiring community partners to do the outreach made for project success. We trained community partners using slide shows to build their skills in presenting the project to residents. They would also give talks about the program in community forums. Because they were in contact with the community, our partners were critical to planning, outreach, and evaluation of the project. This relationship built the skills of community partners and also enhanced follow-up and communication with community members. We developed EMPACT materials that document the process, provide a "how-to" workbook and describe all

of the inexpensive ways to reduce lead exposure in urban yards. We believe these products will provide others interested in implementing a similar effort with a template and a road map for success."

LOOKING AHEAD

Building upon the success of their creative, relatively low-cost, low-technology treatment approach, the Boston LSYP is looking to expand its array of treatment options. The project plans to conduct feasibility assessments of other strategies such as installing turf, planting species of plants that take up lead in open sunny areas, or in portable growing bins in more shaded areas. Project stakeholders would also like to explore the use of central, municipally-managed treatment sites to treat and recycle contaminated soil, thereby granting urban communities more permanent solutions.

Now that they have proven that affordable remediation techniques can reduce urban lead exposure, project members are working to ensure that their successes will translate into increased efforts by governments, community organizations, and private enterprises to apply these effective lead-safe yard techniques in neighborhoods across the country.

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DENVER, COLORADO

Gardens for Growing Healthy Communities transforms vacant lots into community gardens

Vacant lots of land once strewn with garbage now bloom with new life in some of Denver’s poorest neighborhoods. Denver Urban gardens has been transforming unused lots onto community gardens, creating pockets of green in the midst of inner-city communities. A recently formed collaborative, Gardens for Growing Healthy Communities, studies how the gardens impact community health and translates findings for stakeholders. These urban oases foster neighborhood ties and promote physical, social, and mental well-being. By providing access to fresh organic produce, opportunities for physical activity, contact with nature, and neighborhood meeting places, these gardens promote physical and mental health in communities with diverse residents.

THE PLACE

Denver is a rapidly growing urban center that must cope with the challenges of expansion and pressures that growth can place on low-income, inner-city residents. Denver’s population of about 554,636 is about 32% Latino and 10% African American. Denver has over 70 gardens and garden parks in 30 of its 77 neighborhoods. Gardens for Growing Healthy Communities has been working to transform unused land into urban gardens in moderate and low-income neighborhoods which have higher concentrations of Latino and African American residents than the city as a whole. Approximately 14% of

the mostly Latino population lives below the poverty line, according to the 2000 US Census. In the communities where gardens have been constructed, 22% of the population 25 years and older has less than a high school degree.

THE PROJECT

Gardens for Growing Healthy Communities represents a partnership between Denver-based community organizations, the University of Colorado and community residents. This project fosters a “class-blind environment” among neighbors who share a passion for gardening, explained Jill Litt, Gardens for Growing Healthy Communities program director and principal investigator of the project’s research/academic component. “Gardens cross all boundaries: age, race, education and ethnicity,” she said. Denver Urban Gardens, the lead community organization responsible for building and maintaining gardens, estimates that over 25,000 people participate in gardening-related activities each year.

Litt believes that community gardens are a “true public health intervention because they influence so many aspects of health: mental health, physical well-being and social capital through both direct and indirect pathways. The goal of this project is to understand the role of community gardens as a catalyst for broader neighborhood improvements and public health changes,

The goal of this project is to understand the role of community gardens as a catalyst for broader neighborhood improvements and public health changes, including physical activity and dietary patterns.

including physical activity and dietary patterns. We are slowly gathering the data to learn the many ways gardens impact health.”

By drawing upon the core competencies of each of the partner organizations, the Denver gardening collaborative manages to bridge the gap between research and implementation. Not only do the groups foster the creation of urban gardens, but they also document the significant health impact these gardens have on local community health. Community involvement and leadership are cornerstones of the program’s sustainability and popularity.

When it comes to doing the hands-on work of garden creation, Denver Urban Gardens takes the lead. Working with volunteers of all ages, the group provides technical assistance, helping residents plan, design, coordinate, and construct urban gardens in their neighborhoods. It also offers training and education about herbs, composting, tractors, food preservation, water conservation, and other gardening skills. Central to the sustainability of local gardens is the group’s commitment to leadership training and community empowerment to maintain, promote, and nurture gardens. Gardens are community initiated and maintained and gardeners collectively assume responsibility for improving their own neighborhoods and cultivating a sense of pride in their surroundings while growing fresh, organic food close to home.

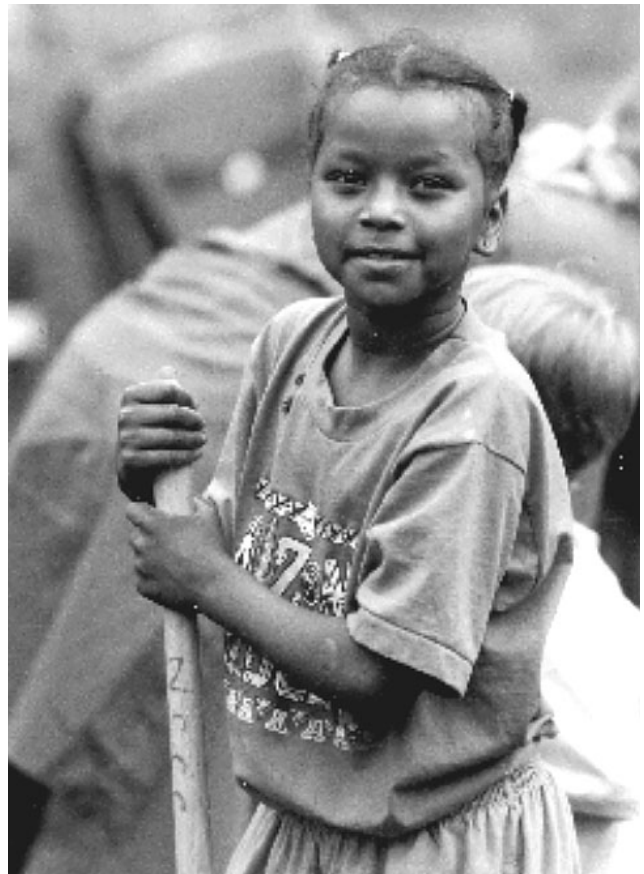
THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

The Gardens for Growing Healthy Communities collaborative brings together a number of different community groups and academic and government institutions, each with different strengths and capabilities.

Community participants play a vital role in shaping garden design, building and planting gardens, and providing ongoing maintenance to gardens. Community groups in-

Gardeners collectively assume responsibility for improving their own neighborhoods and cultivating a sense of pride in their surroundings while growing fresh, organic food close to home.



CHILDREN DEVELOP A PASSION FOR GARDENING WHILE GETTING ACTIVE AND MASTERING NEW SKILLS TO GROW FRESH PRODUCE.

clude: Denver Urban Gardens, a well-established organization that brings gardens to Denver’s urban areas and has a great deal of influence on local policy; Groundwork Denver Inc., a nonprofit dedicated to restoring vacant and underutilized urban land (e.g., urban brownfields); and FrontRange Earth Force, a nonprofit that works with youth around environmental stewardship.

Meanwhile, the Department of Anthropology at the University of Colorado, Denver and the Department of Preventive Medicine and Biometrics at the University of Colorado Health Sciences Center in the School of Medicine provide coordination, funding, and researchers for the effort. As the lead academic part-

ner, the University of Colorado’s Health Sciences Center tackles the data collection and monitoring components of the program. Since May 2002, the university has provided student and researcher volunteers to study the health impact of gardens on both the gardeners and the surrounding communities. As part of a class on community assessment, students collect qualitative research data through interviews with community participants and by conducting physical observation of garden sites and the surrounding neighborhoods. Using community-based, participatory techniques, the group has studied the health impact of gardens in approximately 30 Denver neighborhoods, with a focused pilot project in 14 community gardens in two Northern Denver neighborhoods. The collaborative has worked out a complex cost structure with state and local contractors to utilize overgrown and vacated lots. On average, building a new garden costs \$10,000 and making enhancements cost \$3,000 to \$5,000. Maintenance and upkeep costs are kept low through the in-kind efforts of community members. Additionally, Denver’s Department of Parks and Recreation donates resources for basic garden maintenance, including sidewalks, accessibility to soil, streetlights, and water.

THE RESULTS

Healthy Change in Local Environments

Preliminary findings indicate that Denver’s neighborhood gardens improve the health of resident gardeners by increasing physical activity levels, consumption of fresh fruits and vegetables, and social connectedness through gardening circles—not to mention stress relief.

These gardens provide fresh fruits and vegetables, which are eaten by gardeners and distrib-

uted to neighbors, homeless shelters, and assisted living facilities. In addition, gardeners share recipes for healthy salsas and other foods prepared from the gardens, which further encourage produce consumption. The gardens also contribute to strengthening the fabric of communities and building social capital, explained Litt. Social capital includes the “connections among individual-social networks and the norms of reciprocity and trustworthiness that arise from them,”¹ as well as standards for behavior that are socially dictated. In interviews, participants identified relaxation, decreased stress, and the feeling of a spiritual connection with “Mother Earth” as benefits of gardening.

This project’s findings echo the limited but growing body of published research that indicates that community gardens confer physical and mental health benefits to gardeners. A case-control study of the health impacts of urban gardening in Philadelphia conducted by Blair et al. found gardening to have a positive impact on dietary intake, psychosocial health, and community participation. The authors note that gardeners ate “significantly more of six vegetable categories than non-gardeners...and they also consumed less milk products, sweets, and sweet drinks.” In addition, “gardeners were significantly more likely to participate in food distribution projects, neighborhood clean-ups and neighborhood social events.”²

At community garden projects in California funded through the Healthy Cities and Communities effort, Twiss et al. documented a number of outcomes ranging from increased physical activity and consumption of fruits and vegetables at one site, to local policy development, community improvement, and increases in knowledge and skill at other sites.³

Community surveys also support the link between urban garden-



THE CHALLENGING WORK OF GARDENING IS AN INTERGENERATIONAL ACTIVITY, WHERE YOUNG PEOPLE LEARN FROM EXPERIENCED GARDENERS.

ing and improved perceptions of mental and physical well-being.⁴ In 2000, Armstrong published results from a survey of community garden coordinators from 63 community gardens in upstate New York which revealed several health reasons for participation in community gardens including: access to fresh food, exercise, contact with nature, and mental health benefits.⁵ In addition, Armstrong found that gardens located in low-income areas were four times more likely to catalyze efforts to deal with community concerns than gardens in non-low-income areas. Because this program reclaims vacant lots, garden creation and maintenance also result in the reduction of other environmental health hazards, including broken bottles and obvious illicit drug use. Finally, gardens provide a source of beauty that increases property values and desirability of properties in garden neighborhoods. Emerging research and program evaluations strongly suggest that community gardens influence several dimensions of health, particularly in low-income, urban neighborhoods where the gardens can be sanctuaries that promote physical, social, and mental well-being.

WISDOM FROM EXPERIENCE

Litt advises, “Communicating results of the program to partners so that they are aware of and fully engaged in each step of the process is essential. I work really hard to emphasize the importance of giving back to the community with project volunteers, students and fellow researchers, not simply going in and getting results. One way we have done this is to demonstrate support for, and investment in, the project’s success through volunteering time to the gardens and in the community.”

LOOKING AHEAD

Building on its current success, Gardens for Growing a Healthy Community is currently working with Denver Urban Gardens to use geographic information system technology to map out areas and expand work to bring gardens to areas of need. Over the long-term, the collaborative will work with community partners



COMMUNITY RESIDENTS BUILD, NURTURE AND MAINTAIN GARDENS WHICH OFTEN SERVE AS NEIGHBORHOOD MEETING PLACES.

to identify new sites for gardens. Community maps will be used to facilitate discussions with communities to identify areas in need of open space and redevelopment, and will allow project partners to prioritize areas for enhancement and cultivation. It will also allow residents to share their ideas about how to create and maintain gardens that will improve physical activity, nutrition, and other health behaviors in their particular communities.

In the future, Litt and her partners are planning to establish the North Denver Health and Sustainability Initiative to empower residents to make sustainable, neighborhood-level changes that will reduce and eliminate health disparities brought on by environmental inequities. This project will build on the community garden efforts by applying lessons learned about community organizing, leadership, and skill development to eliminate environmental injustices.

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SOUTH LOS ANGELES, CALIFORNIA

Community Coalition reduces violence and crime by closing neighborhood liquor stores

South Los Angeles has an African American cultural tradition marked by rich culinary, artistic, musical, and architectural achievements. Today, South LA is predominantly Latino. In the late 1980's, the area's struggles with crime and violence intensified during the crack cocaine epidemic. Crisis levels of homicide became a catalyst for community activists and leaders to search for tangible ways to halt the substance abuse and violence that were tearing apart the community.

A newly formed group, the South LA Community Coalition, led a campaign to target liquor stores that detracted from community well-being and created public nuisances.

Based on a large survey of residents, the group focused its efforts on identifying alcohol vendors with high rates of alcohol- and drug-related violence in and around their businesses, and seeking closure of these community-unfriendly establishments. Community Coalition efforts to thwart violence and reduce substance abuse in an area oversaturated with alcohol outlets have achieved success by using a community-driven approach to reduce the number of neighborhood businesses that represent a threat to the health and well-being of local residents.

THE PLACE

The Community Coalition focuses its efforts in South LA, an area bounded by the Interstate 10 Freeway to the north, Highway 105 to the south, and between Alameda and La Brea Avenues to the east and west, respectively. The 820,000 residents (in an area that is approximately 71.3 square miles) are about 65% Latino



SOUTH LOS ANGELES RESIDENTS PROTEST LIQUOR STORES.

and 35% African American. With a median annual income of \$21,000, the area is beset with a poverty rate that is two times higher than that of Los Angeles County and three times higher than the national average. Prior to the Coalition's work, the area had over 700 liquor stores—more than the entire state of Rhode Island (population 1,048,319; area 1,045 square miles) or Pennsylvania (population 12,281,054; area 44,820 square miles). Poverty, gang violence, drug trafficking, and other substance abuse-related issues are among their most pressing and persistent problems.

THE PROJECT

The initial force behind the Community Coalition came when a single individual decided to step up and make change. It was 1990 and Karen Bass, a long-time civil rights activist, was working as a physician's assistant at LA's County General Hospital. When Bass realized she was spending her days and nights sewing up bullet wounds, she got fed up and decided something had to be done. She saw a battle brewing in the community and began to investigate. Violence and crack cocaine addiction had risen to crisis levels in South LA, which sparked Bass to mobilize her activist friends and colleagues.

After a conference on the impact of crack in African American communities brought more people together, Bass's initial group expanded to about a dozen people. The Coalition began to deal with substance abuse in South LA to look for possible solutions. The group went straight to community residents for advice.

Using a door-to-door survey of nearly 30,000 residents, the Community Coalition asked community members what they thought should be done to reduce drug- and alcohol-related crime and violence. Much to the Coalition's surprise, respondents overwhelmingly recommended reducing the number of liquor stores in the community. As interim Executive Director Marqueece Harris-Dawson explained, "We were surprised. The staff fully expected the issues to be around drug houses or gang-related violence. We wouldn't even have looked at liquor stores if we didn't do a resident survey."

The group decided to take advantage of Los Angeles County's conditional use permits for liquor stores, to seek closures of nuisance establishments. Based on neighborhood dialogues and evidence of crime and illicit behavior, they quickly identified 24 liquor stores as primary targets, then launched a grassroots/direct advocacy campaign to get decision makers to act in favor of the Coalition. They distributed flyers, talked to people door-to-door, researched the liquor store industry, and held

"The staff fully expected the issues to be around drug houses or gang-related violence. We wouldn't even have looked at liquor stores if we didn't do a resident survey."

neighborhood meetings. They approached liquor store owners to let them know about community complaints and asked them to clean up or close stores that had high levels of crime, violence or vice associated with them.

Getting recognition and support was not easy. When residents and coalition members did not get attention and response from key leaders, they sent a petition with 30,000 signatures to Mayor Bradley, protested in front of council members' homes, passed out flyers to liquor store owners and their neighbors, and communicated their dissatisfaction to distributors or involved third parties, such as churches. According to Harris-Dawson, "When people refused to meet with us, we had to get really creative." In certain cases, coalition members decided to distribute flyers and educational materials in the neighborhoods of liquor store owners' homes to expose store owner negligence.

Then in 1992, every single one of the 24 liquor stores slated for presentation to the planning committee for revocation of permits was burned down in the LA riots. Dawson hypothesized that these liquor stores were "a ripe target during the riots because the element that pursued that kind of negative activity was already there at those stores." One of the stores the Coalition was pursuing, Tom's Liquor at Florence and Normandie Streets, was where Reginald Denny was dragged from his big rig truck by several people and beaten, nearly to death, on April 29, 1992.

Though the fires might have been the end to the Coalition's campaign, the city's response to the destruction of businesses was the Rebuild LA Campaign, which aimed to fast-track rebuilding by removing bureaucratic barriers. "All you had to do was prove you had previously run a business in the area," Harris-Dawson explained.

The Community Coalition shifted gears to focus on discouraging the city from pursuing fast-track redevelopment for liquor stores. "That approach is okay with churches, schools, and housing, but not with liquor stores," says Dawson.

Today, the Community Coalition has 3,500 dues-paying mem-

bers advocating for the closure of liquor stores that are public nuisances. Because closing a liquor store is a lengthy process, which can span anywhere from three to five years and sometimes longer, keeping Coalition volunteers engaged for that length of time has been a challenge. “There are a lot of hoops to jump through. And it doesn’t matter what happens during that time, someone can get shot in front of a store, but we still have to go through the same process,” said Harris-Dawson. The process is further complicated by alcohol industry lawyers working on behalf of storeowners to prolong the process, to stretch it out, and to “starve out” the community in hopes of derailing momentum and in an effort to maintain sales, he said. However, changes have been made and the coalition continues to push forward.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

The Community Coalition’s members get involved in campaigns at various times and in a range of capacities, including collecting documentation, attending meetings and hearings, and testifying in favor of liquor license revocation at City Hall. A number of churches, schools, and small businesses are involved with the coalition as well. As Harris-Dawson explained, “We are also very strategic about teaching the process to others. So, when a neighborhood succeeds, they go to another neighborhood and provide training for the next set of people.” Cheryl Grilles, of Loyola Marymount University and the Los Angeles-based IMOYASE Group (an African term meaning: knowledge, understanding and manifestation) provided evaluation services to quantify the effect of each liquor store closure on violence and crime rates.

Despite discomfort on the part of some activists with taking government money, the group eventually decided to get 501(c)3 status as a means to access funds to do substance abuse prevention work.

The neighborhood is a safer, more pleasant place to be. “And they say things like, ‘Now, I can sleep at night’ or ‘Now, I feel safe walking out in the morning.’”



SOUTH LA RESIDENTS RALLY TO REBUILD WITHOUT LIQUOR STORES.

Now, the Coalition takes relatively little money from government vis-a-vis its total budget, which is mostly funded by foundations and membership dues.

THE RESULTS

Healthy Change in Local Environments

Coalition efforts have met with a good deal of success. In only three years, the Community Coalition prevented the re-opening of the 24 liquor stores it had originally targeted before the 1992 LA riots, and shut down nearly 200 operating liquor stores in South Los Angeles. The IMOYASE Group has documented an average 27% reduction in violent crime/felonies, drug-related felonies or misdemeanors, and vice (e.g., prostitution) within a four block radius of each liquor store that was closed. While he suspects alcohol consumption rates have declined in the area, Dawson concedes, “It is hard to document consumption. We really have no baseline for consumption, but we do believe that less availability is associated with less consumption.”

Existing health research seems to bear that out. Reduced availability of alcohol has been linked

to reduced consumption and a reduction in alcohol-related problems including both intentional and unintentional injuries.¹ Several studies have shown that alcohol outlet densities are strongly correlated with motor vehicle crashes, violent assault, crime, prostitution, illegal drug sales, and driving while intoxicated.² According to Ashe, et al., the connection between alcohol availability and sales is sufficiently strong that the World Health Organization concludes, “Reducing the physical availability of alcohol through limitation on the number and placement of outlets will result in reductions in alcohol-related problems.”³

Despite these promising health implications, the impact that is perhaps most salient to residents in the short-term is a feeling that the neighborhood is a safer, more pleasant place to be. “People primarily talk about safety and peace after closures occur,” said Harris-Dawson. “And they say things like, ‘Now, I can sleep at night’ or ‘Now, I feel safe walking out in the morning and there is no one urinating in my backyard.’”

WISDOM FROM EXPERIENCE

In struggles that involve bureaucracy, persistence is key, Harris-Dawson explained. “You have to talk to the people. You can never skip that step when pursuing an organizing campaign. If people don’t recognize the issue as a problem, they won’t do the work. Follow-through is critical. The system relies on people not following through. Answer every phone call, fill out every form and attend every meeting and hearing. If you don’t, then you’re doomed to failure. Any bureaucracy waits for you to go away and doesn’t make it easy for you to stick around.” Harris-Dawson also advises: “People power is the key. Typically, residents approach the Community Coalition to help work on a closure. We always look for a critical mass—at least six people—who are willing to do the work of filing the case, knocking on doors and bringing attention to the problem. We never say: ‘Here’s a messed up liquor store and override the community consensus process.’”

LOOKING AHEAD

About 25 of the cases the Community Coalition pursued have yet to be resolved, but the members remain persistent despite the fact that many of the rules are designed to work in favor of businesses. Because of the great deal of red tape to get the system to work for community members, due diligence is needed to keep people’s energy and hopes up around these issues, said Dawson. Perhaps now that founder and executive director Karen Bass is expected to win a state assemblyperson seat in the November 2004 election, the Coalition (and organizations like it) will be granted more power and support from the top.

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HUDSON HEIGHTS, NEW YORK CITY

The Paterno Trivium transforms an unsafe traffic intersection into a neighborhood gathering spot

At the tip of Manhattan on a hill overlooking the Hudson River, three streets converged to create an unsafe intersection for both motorists and pedestrians. Cars roared by while walkers warily dodged traffic—that is, until a group of residents rallied to convert the dangerous intersection into a “pocket” park. By creating a highly visible fork in the road, the park slows traffic, channeling cars safely through the intersection. Meanwhile, the addition of curb ramps and clearly marked crosswalks have increased pedestrian safety, particularly for children walking to the nearby school. The park—called The Paterno Trivium—is a meeting place for residents to gather, sit, and take in the vista of the Palisades across the Hudson on the Jersey shore. The Paterno Trivium has become a beacon in the neighborhood, signaling walkability, attention to community connections, and concerns for pedestrian safety.



THOMAS NAVIN

DEDICATION AND RIBBON CUTTING CEREMONY OF THE PATERNO TRIVIUM, A NEWLY DESIGNED POCKET PARK IN HUDSON HEIGHTS.

THE PLACE

Hudson Heights, a neighborhood within Washington Heights, is the highest point in Manhattan. Home to a diverse mix of people, many of the neighborhood’s eldest residents are Irish, German, and Jewish immigrants who settled there in the 1920’s and 30’s, while newer residents include Puerto Ricans, Dominicans and a large and growing Russian population that live in the eastern portion of the community. The area is also home to a large Orthodox Jewish population. Because of its proximity to subways and easy access to Manhattan, the area is also very attractive to young singles, artists and musicians.

THE PROJECT

The idea for The Paterno Trivium developed out of community concern over a hazardous intersection and the desire to create a central neighborhood meeting place. The poorly defined markings and lack of pedestrian-friendly infrastructure at the junction of Cabrini Boulevard, Pinehurst Avenue, and West 187th Street worried residents, especially because it was located so close to a public elementary school. On a daily basis, residents would see motorists cut dangerously through the intersection, while elderly pedestrians had no safe place to stop while crossing the busy streets.

Residents had been quite interested in somehow fixing the intersection to make it safer for the community, so when Thomas Navin, a trained architect moved into the neighborhood, residents approached him and asked him to join their efforts. With his formal training and interest in improving his new neighborhood,



THOMAS NAVIN



THOMAS NAVIN

FRIENDS OF THE PATERNO TRIVIUM MAINTAIN PLANTS WITHIN THE PARK (LEFT). HUDSON HEIGHTS ELDERS MEET AT THE CIRCULAR BENCH IN THE PATERNO TRIVIUM (RIGHT).

he was able to observe how the space was being used and immediately saw the potential for what it could become.

In the summer of 2000, he drew up a design that he presented to the community board for approval. “From the get-go, I felt it should be a clearer crosswalk for pedestrians and a resting point,” Navin explained. “I imagined a place for meeting where people could stop, rest and see the views of the cliffs on the far side of the Hudson and the afterglow of the setting sun.” The triangle’s central location near a block-long commercial hub makes it an ideal park location and because it also rests atop a steep hill, it provides a resting place as pedestrians crest the peak.

After receiving community board approval for his design, Navin discovered the Department of Transportation and Department of Parks had already begun to draft their own plans for the area. But because the community board had backed Navin’s design, the city agencies accepted it. The agencies also appreciated the plan for its practicality and attention to safety and agreed to pay for sidewalks, curbing and, through New York City’s Greenstreets program, planting or “greening” the area.

Navin had envisioned a design that also had some unique features, like special planters, a radiating sun pattern embossed in the concrete, and a curved bench

to improve the look and the utility of this triangular site (26’4” x 41’x34’8”). Therefore he anticipated the need to have additional backing and clout to ensure that the plan was fully implemented. As a result, Navin assembled an advisory group that was both knowledgeable about landscaping and well connected to the park system. The group advocated for a customized bench that has become the park’s signature element. In an attempt to weave the park into the historical fabric of the neighborhood, the advisory group also proposed naming the park in honor of Charles Paterno, a former landowner who had brought a great deal of residential housing to the area. The New York City Park Commissioner ultimately embraced these ideas. The only catch was that the advisory group had to take responsibility for maintaining the area and its distinct elements. This group, which named itself Friends of The Paterno Trivium, was not daunted. They established a maintenance endowment to provide care for the park’s unique features. While the Parks Department would maintain the basic elements of the Trivium, the Friends agreed to raise funds and provide fiscal oversight for the maintenance needed to keep The Trivium in excellent condition.

On August 4th, Charles Paterno’s birthday, over 200 community residents gathered for a ribbon cutting ceremony for The Paterno Trivium. The late Paterno’s

granddaughter attended the event, as did a local city councilman and the New York City Parks Commissioner. Paterno's granddaughter, who had solicited donations from family members for the Trivium's signature semi-circular bench, presented the funds to the group. Today, The Paterno Trivium is viewed as an important element in the community and the Friends of The Paterno Trivium have generated significant support from community members and local officials alike. The intersection is perceived as safer for pedestrians, offering them an inviting respite as they cross any of the three busy streets that converge at the triangle. New crosswalks and the visibly marked fork in the road funnel traffic and slow motorists who are now more aware of the pedestrians.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Under the leadership of Executive Director Navin, the volunteer advisory group that calls themselves Friends of The Paterno Trivium provides stewardship for the park. They pick up trash, plants bulbs and water the foliage regularly. The group has planted Winter King Hawthorn trees, which are in full bloom around Mother's Day weekend, and groundcover that blooms in August to commemorate the birth anniversary of the Trivium's namesake. The Friends toil all year round, shoveling snow in the winter, planting in the spring, and continually maximizing their connections with the landscape industry to get plants and planters at the lowest possible cost. The group also holds fundraisers and serves as liaison with the Parks Department. The circular bench (\$7,500); planter (\$1,500); low protective fencing (\$3,000); and seasonal plantings (\$200) are the result of private donations.

New York City Department of Parks and Department of Transportation's project, Greenstreets, provides for the upkeep of basic elements of the Trivium. In an

effort to make "green" traffic intersections throughout New York City, Greenstreets provided initial funds for the curbing, concrete work and first plantings. Neighborhood volunteers of all ages weed, water, and plant bulbs. Local merchants and surrounding buildings provide access to water; a landscaping company has donated plants; and the Paterno family offers ongoing support. Key neighborhood activists and neighborhood organizations, such as Hudson Heights Owners Coalition, a group of apartment owners in the area, donate money, give in-kind support, and announce fundraising events in regular mailings and at monthly meetings.

THE RESULTS

Healthy Change in Local Environments

The Paterno Trivium represents the successful completion of a community-initiated effort to improve the neighborhood. Most of all, The Paterno Trivium serves an important function: to slow automobile traffic, improve pedestrian safety, and create a safe destination for pedestrians. At the same time, its form adds another important dimension to The Paterno Trivium. Attention to detail and awareness that the space could be much more than simply a pedestrian enhancement have resulted in a gathering space where there was none. This park also promotes social connections. Senior citizens and teenagers alike now have a place where they can meet and talk with friends.

Careful use of the triangular space has prompted positive social exchanges. Though early on residents had fears that placing a bench on the site would encourage homeless people to sleep there or promote loitering, Navin says he has been amazed at how the

space really works. Different people enjoy the space in different ways. "The curvature of the bench encourages social interaction by creating a comfortable seating arrangement. It allows for eight people to be in one conversation because they are facing inward, but because of the arm rests, it also allows people to sit alone or as

"I imagined a place for meeting where people could stop, rest and see the views of the cliffs on the far side of the Hudson and the afterglow of the setting sun."



HUDSON HEIGHTS RESIDENTS SIT AND WATCH PASSERSBY FROM THEIR NEIGHBORHOOD RESTING PLACE.

couples. The curve also allows people to walk up to the Trivium, or roll up in a wheelchair and become part of a conversation that is already going on. This is an amazing quality of the semi-circular bench.” Wheelchair users have also benefited from the curb-cuts that were etched into the sidewalks when the park was constructed. This allows them to remain safely on the sidewalk.

The Trivium’s flexible, multipurpose design is used in different ways depending on the time of day. In the morning, dog-walkers and joggers stop with their morning cup of coffee, while later in the morning elderly residents join companions or attendants to rest at the top of the hill after shopping. The curved bench allows visitors to choose between facing or putting their backs to the sun. As school lets out kids gather, and at dusk in warm weather another group of seniors, primarily women, chat until about 15 minutes

Since its inception, teenage skateboarders who use the Trivium have caused stress in the community. While some resident groups have sought police involvement, the Friends have been enlisting skateboarders to help plant and water. Through this alternative approach they have transferred a sense of ownership and pride to the skateboarders.

after sunset. In the evening, people pause on their return home and teenagers meet up.

But the park’s construction has not been struggle-free. Oftentimes with community areas like these, youth can be perceived as “troublemakers,” ruining the atmosphere for other users. Since its inception, teenage skateboarders who use the Trivium have caused stress in the community. While some resident groups have sought police involvement, the Friends have been enlisting skateboarders to help plant and water. Through this alternative approach they have transferred a sense of ownership and pride to the skateboarders, some of whom now act as “protectors” of the park. Recently, community groups have also been asking the skateboarders what features appeal to them, prompting discussion about creating a separate facility for skateboarders to use. This was an innovative solution to a common problem in many communities, and a unique way to engage unlikely volunteers.

Truly a community resource, the Trivium’s features encourage diverse groups of people to use the space in their own ways. And the transition periods bring together groups who might not normally interact. “Something as subtle as the curve creates opportunities to talk,” said Navin. And “each year a holiday tree is donated by one of the local merchants and community members are invited to decorate the tree,” he said. “Throughout the year, lots goes on that brings the community together and that ties in with the four seasons.”

Traffic calming measures, like those initiated at The Paterno Trivium, reduce injuries, slow automobile traffic, increase perceived safety, and are believed to promote walking and biking.¹ In *Our Built and Natural Environments: A Technical Review of the Interactions between Land Use, Transportation and Environmental Quality*, the US Environmental Protection Agency reports that “narrow streets, shade trees, well-maintained sidewalks, and traffic slowed through traffic calming measures also improve the pedestrian envi-

ronment” and can encourage walking.² Pedestrian-friendly intersections, especially along routes that children take to school and those connecting residential areas to shops and transportation are important for reducing traffic-related pedestrian injuries.

Improved pedestrian safety in the neighborhood encourages healthy activities such as walking and jogging. Increased access to such health-promoting environments can prove to have significant benefits for residents.

WISDOM FROM EXPERIENCE

Navin cautions that “it is imperative to forge connections and collaborations at several different levels. We had to reach beyond the community groups to work with larger institutions and bureaucracies to move this effort forward and legitimize what we were seeking to achieve. The composition of the advisory board was instrumental in getting some of the city groups to take us seriously,” he says. “Also, naming The Trivium after Charles V. Paterno grounded the place in that it suggested a sense of permanence and created a way for people to connect to the history of the neighborhood. The way a space is constructed has a lot to do with how people will use it.”

LOOKING AHEAD

Now that The Paterno Trivium has been successfully completed, the Friends serve as a resource to other community organizations seeking to transform elements of their built environments. Upkeep and maintenance of the plants are ongoing responsibilities. And though many Greenstreets projects have fallen into disrepair because of lack of ownership, the efforts of community activists and the Friends keep the Trivium well-maintained and replanted seasonally. Volunteers demonstrate their ongoing commitment by making their cleanup, watering and planting efforts visible to the community.

In addition to reinforcing local social interactions, the creation of the Trivium has inspired further neighborhood development. Now other initiatives to pro-

mote walking and increase social connectedness are underway in the Washington Heights area. One block east of the Trivium, community members are working to beautify a stair path to create a “natural gym” and a “natural amphitheater” to promote use of the stairs. These newly inspired activities aimed at behavioral and environmental change illustrate the enduring impact that community building efforts like The Paterno Trivium can have on activity, safety, and local culture.

PROGRAM CONTACT

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BOSTON, MASSACHUSETTS



The Fenway Alliance revitalizes a cultural district by improving walkability

In the late 1970's, high crime rates and lack of perceived safety brought together concerned organizations to address the vitality of an area that boasts many of Boston's finest arts institutions, some dating back to the early 1900's. To help remedy these and other neighborhood problems, local businesses and cultural organizations continue to levy their collective influence through the Fenway Alliance, a coalition whose mission is to "achieve an improved physical environment, sense of community, and quality of life for members, residents and constituent patrons of the Fenway Cultural District." Fenway Alliance represents 22 well-respected arts, culture and academic institutions and boasts a high degree of credibility within the city. Today, it shepherds multi-million dollar infrastructure projects that focus on making the Fenway area walkable, beautiful, and accessible to both visitors and residents. Their success serves as a model of how a partnership can encourage a walkable community. Improving the walkability of a community increases opportunities for physical activity that can result in positive health outcomes for community residents.

THE PLACE

Home to Symphony Hall, the Boston Museum of Fine Arts, and The New England Conservatory (among other arts centers), the Fenway area also boasts Harvard University's School of Public Health and Northeastern University. Both the nation's first YMCA and Fenway Park, home of the Boston Red Sox, have adorned this rich cultural district since 1912.

The area also features a 19th century linear park system called the Emerald Necklace, designed by

Fredrick Law Olmsted, one of America's great landscape architects and the creator of New York City's Central Park. When he conceived the park landscape, Olmsted hoped it would serve as a refuge where city dwellers could regenerate and restore mind, body, and spirit. The Fenway area is not the most ethnically diverse neighborhood, with only 22% of its population comprised of African American, Latino, Asian, and "other" residents. However, nearby Roxbury and South End communities are considerably more diverse with ethnic groups making up 94% and 55% respectively. The Fenway Alliance is working to make the district attractive, affordable and accessible to diverse residents (including Russians and elderly in and near the Fenway community).

THE PROJECT

When ten organizations first joined to form the Fenway Alliance in 1977, the group's primary concern was safety. Gradually, as their efforts began to positively impact safety concerns, the group's focus expanded.



AERIAL VIEW OF THE MUDDY RIVER PARK WITHIN THE EMERALD NECKLACE IN THE FENWAY.



PATRONS VISIT THE MARY BAKER EDDY LIBRARY (LEFT). RENOVATION OF HUNTINGTON AVENUE INCLUDES WIDENING OF SIDEWALKS AND INSTALLATION OF ANTIQUE STREET LIGHTS (RIGHT).

The Fenway Alliance shift in mission came about as representative institutions observed that, despite the beautiful and historic institutions embedded in the Fenway, the surrounding area was simply not very attractive or inviting. Two major thoroughfares funnelled high-speed traffic through the area, creating traffic patterns at odds with pedestrian and bicycle safety. By the late 1980's the Fenway Alliance began efforts to increase pedestrian traffic by improving both the walkability and aesthetics of the area. Today's Alliance is made up of 22 member institutions.

Among other projects, the Fenway Alliance serves as an organizer, overseer and watchdog for the massive reconstruction of Huntington Avenue/Avenue of the Arts. To promote foot traffic that is both good for the community and good for business, the group has lobbied for pedestrian enhancements to the major roadway including widening sidewalks, adding stop signs, planting hundreds of trees, and installing antique-looking lights, public art and "street furniture." To keep reconstruction moving forward,

"There were many times when things would not have gotten done if the Fenway Alliance wasn't there watching out."

representatives from the Fenway Alliance visit construction trailers biweekly and attend team meetings to ensure progress and ongoing funding. "There were many times when things would not have gotten done if the Fenway Alliance wasn't there watching out," said Kelly Brilliant, Executive Director.

Through the Alliance's advocacy efforts, the city of Boston (Department of Public Works), the state of Massachusetts (Massachusetts Highway Department) and the Massachusetts Bay Transportation Authority (MBTA) were able to access state and federal funds to implement changes to the avenue in the heart of the Fenway Cultural District. Nevertheless, "Funding is constantly in jeopardy, and we repeatedly plead our case to the city and the state," says Brilliant.

Another ongoing project is the restoration of the Muddy River, which serves as the backbone of Olmsted's Emerald Necklace. The Fenway Alliance joined restoration efforts already underway when flooding in 1977 and 1995 caused millions of dollars of damage to artwork in the Museum of Fine

Arts, and damage within several of the surrounding academic members. The system of linked parks, which integrates glades, dells, sweeping vistas, reflecting pools, bike paths, and walkways, is one of the most uniquely designed historic urban waterways in the nation. The Fenway Alliance is currently collaborating with preservation groups to achieve a balance between historic landscape preservation principles, resource protection regulations, public safety measures, and modern engineering practices. Their goal is to create a place that people will want to walk to and enjoy.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

The Fenway Alliance includes 22 member institutions: Berklee College of Music, Boston Arts Academy, Boston Conservatory, Boston Symphony Orchestra, Emmanuel College, The First Church of Christ Scientist, The Forsyth Institute, Harvard School of Public Health, Huntington Theatre Company, Isabella Stewart Gardner Museum, Mary Baker Eddy Library for the Betterment of Humanity, Massachusetts College of Art, Massachusetts College of Pharmacy and Health Sciences, Boston Museum of Fine Arts, National Braille Press, New England Conservatory, Northeastern University, School of the Museum of Fine Arts, Simmons College, Wentworth Institute of Technology, Wheelock College, and YMCA of Greater Boston.

The Alliance operates as a nonprofit organization with a budget of approximately \$300,000 per year to facilitate project planning, implementation, and membership support services, as well as its yearly “Opening Our Doors” event. In addition to institutional support, key individuals, like project consultant Jack Martin (formerly of Northeastern), provide invaluable expertise in navigating bureaucracies and lobbying for resources to effect change.

Though “each of the member institutions faces pressing operational, financial and programmatic challenges,” according to Brilliant, “the Alliance seeks to identify areas of common interest to benefit the greater good.” These organizations lend financial and in-kind

support as well as technical expertise to the conceptualization and implementation of Alliance efforts.

THE RESULTS

Healthy Change in Local Environments

Renovation of Huntington Avenue/Avenue of the Arts is almost complete (expected: fall 2004). In an area where people once feared for their safety, pedestrians stroll the avenue at all hours. Much of this transformation has been attributed to efforts to make the area more pedestrian friendly and vibrant for passers-by. Upgrades to the physical environment are also underway in the Muddy River Park. When the river restoration project is complete, the park will be a beautiful place for residents and visitors alike and threats of flooding will be greatly reduced.

Because its interest lies in bringing more foot traffic to the area to support local businesses and institutions, the Fenway Alliance has not attempted to document increased physical activity as a result of restoration efforts, as they are more interested in increasing admission to, and patronage of, local institutions. However, previous research suggests that improving pedestrian access increases walking activity. In *Health*



FENWAY AREA, BOSTON, MASSACHUSETTS.

and Community Design: The Impact of the Built Environment on Physical Activity, Frank et al. synthesize diverse literature from urban planning, transportation and health and describe myriad factors associated with walking and community design. “Pedestrians require good sidewalks and crosswalks [as well as] highly detailed, interesting spaces along their route (store fronts, building facades, so-called ‘street furniture,’ etc.),” the authors explain. They also suggest that recreational walking “is best suited to either social environments wherein people stroll along a pedestrianized street or other type of highly social space, or quiet environments for fast walking or exercise.”¹

Similarly, Cervero and Kockelman found that amenities such as street lighting and sidewalks increased trips by modes other than by car.^{2,3} Likewise, research by the Task Force on Community Preventive Services, among others, strongly suggests that enhanced pedestrian facilities promote walking,⁴ and increased walking leads to improvements in health.

WISDOM FROM EXPERIENCE

According to Brilliant, “Although keeping all 22 agencies on board when each has its own budget and bureaucracy requires ongoing negotiation and communication, the collective influence of the Alliance is a testimony to the power of collaboration.” She says that she has really had to “learn how to be patient but persistent in dealing with different timeframes to better connect with different constituents. For example, community groups and city government often move in slower timeframes than institutions and the Fenway Alliance itself, so when attempting to receive input from many constituencies, it often takes time to get groups together.” Brilliant also mentions that her multifaceted role has taught her to “figure out when to ask questions and go deeper and to know when a quick decision based on available infor-

“People matter and should be the first priority of any initiative. Changes to the built environment alone—no matter how necessary or excellent—will not bring people to the area if they don’t feel ownership, comfort, or at home there.”

mation is needed.” She believes that one important aspect of her work goes much broader than the Fenway itself and that is to “advocate to restore funds to arts and culture by describing how much the creative economy brings to the area.”

Most of all, she says, “Remember people matter and should be the first priority of any initiative. Changes to the built environment alone—no matter how necessary or excellent—will not bring people to the area if they don’t feel ownership, comfort, or at home there. Work to break down barriers by really learning what different types of people like, want, and need.”

LOOKING AHEAD

As another important prong in its attempts to engage the community, the Fenway Alliance is ramping up efforts to increase pedestrian traffic and public use of area institutions by expanding its “Opening Our Doors” program, a popular single day event of free cultural activities. To complement these infrastructure enhancements aimed at pedestrians and use of institutions, the group is currently looking at “deeper issues of access” that include identifying ways to increase the diversity of patrons and bringing more Latino, African American, Russian, elderly, and disabled residents from neighboring communities to visit institutions in the area.

The group plans to conduct focus groups to better understand what features might draw Latino and African American visitors. Additionally, the Fenway Alliance has submitted a proposal to partner with schools to bring more youth to local institutions. The member institutions are also planning to implement a “Culture Pass” program that will give discounts or free admission to local attractions. All of the efforts of the Fenway Alliance are woven together in the common fabric of its mission to use the strength of the institutions to improve the physical environ-

ment with the end result of enhancing the quality of life for residents and stakeholders.

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This is one in a series of 11 profiles that reveal how improvements to the built environment can positively influence the health of community residents. The examples illustrate how changes to the built environment can be particularly meaningful in communities that have historically lacked important features such as pedestrian infrastructure, services and institutions, or public art. Taken more broadly, the profiles demonstrate how improvements to the built environment have the potential to reduce health disparities.

The profiles were written and produced by Prevention Institute. Funding and guidance were provided by the Centers for Disease Control and Prevention's National Center for Environmental Health. It is our hope that these profiles will stimulate and inspire partnerships between community residents and practitioners from multiple fields and sectors to design solutions and take action to improve the built environment for the health and well-being of all.

STAMFORD, CONNECTICUT

The Stamford, Connecticut Westside Project supports activity, but builds trust before amenities

Redeveloping blighted Mill River Park has been the dream of several Stamford mayors. The waterway in the city's industrial Westside is littered with refuse, its dam clogged by old mattresses and other debris. City planners envisioned building a path for walking and biking that would provide space for recreation and exercise, as well as serving midtown residents commuting to local businesses. But when they asked Westside community members what they thought would improve neighborhood conditions, residents gave some unexpected answers. Because they felt earlier city developments had failed them, residents were wary of any plan for building new facilities. Instead, they said they wanted motivation and social support to help them get fit.

Not put off by resident feedback, planners and health department officials rerouted their original plan and focused first on rebuilding trust. They heeded neighborhood leaders' initial requests to utilize existing community assets to promote physical activity and now have the foundation for future efforts to improve the built environment with community buy in.

THE PLACE

Stamford's Westside is an inner-city community in an industrial area of the city. Half of the population of approximately 20,000 is African American, while 30% are Hispanic and 20% White or other. The Mill River Park is a largely neglected strip of parkland that creates both a physical and psychological barrier between the Westside and adjacent neighborhoods, including the more affluent midtown area.

THE PROJECT

With an eye toward making the Mill River Park and the adjacent greenway more pedestrian- and bicycle-friendly, the mayor joined with the local health department, the director of planning, and consultants to explore options for improving the area. Early on, the group decided to survey local residents to find out whether or not they used the park and what improvements might reduce the barriers to using it for activity.

The health department hired a consultant to adapt the World Health Organization's International Physical Activity Questionnaire (IPAQ) to survey Westside residents. After conducting the telephone survey, the group had responses from 600 individuals. The group decided to present their findings to community residents as well as housing project tenant councils, business people, local political representatives, church and com-



WESTSIDE YOUTH PLAYING BASKETBALL IN THE MILL RIVER PARK.



STAMFORD RESIDENTS ENJOY WALKING IN THEIR OWN NEIGHBORHOOD.

munity leaders, and health department employees who lived in the Westside. People “were strongly impressed by the data. It was the most powerful thing they’d seen about their community and people were really moved by it,” according to Anthony Iton, the project’s principal advisor.

In addition to resident attitudes, the data showed extremely low levels of physical activity among residents. This came as no surprise. Most unforeseen however, was the survey’s finding that residents preferred leadership and encouragement more than physical improvements to the area. For the most part residents felt safe in their neighborhood, believed that the quality of sidewalks were good and that amenities and interesting destinations were within walking distance from respondents’ homes. “We had biased perspectives,” said Iton. “When we saw that self-described rates of physical activity were low, we assumed that we could reverse that by enhancing the built environment. Our idea was that we’d say, ‘What kind of equipment do you want? Weights? Stretching posts?’ But we learned that it wasn’t because of perceptions of

“What we discovered hit us like a ton of bricks.” Because the residents had experienced “systematic removal under the auspices of urban renewal... they were more than wary of any proposed development projects.”

crime, the quality of the sidewalks or amenities—these things were not the problems. What we discovered hit us like a ton of bricks,” said Iton. “The contentious history of urban renewal in the 70’s had produced a current of distrust of city redevelopment initiatives among many long-term residents of the Westside,” he said. Because the residents had experienced “systematic removal under the auspices of urban renewal...worse than gentrification...knocking down homes, destroying communities and replacing them with corporate office towers, a large shopping mall and freeway off-ramps,” they were more than wary of any proposed development projects.

For community residents it was more about working with one another to motivate change within individuals. “We found that the community members wanted motivation and social support for getting active. This was a real awakening,” said Iton.

Residents identified the need for more programming and leadership in their own community as essential ingredients to promote physical activity. So the city responded by establishing two separate community-based committees. First, the programming committee focused on enhancing programs for residents and supporting existing Westside institutions. In just one example, the city has demonstrated good faith by making tangible investments in the physical activity programming at Yerwood Center, a centrally located Westside community center.

The goal of the second committee is to solicit community feedback on proposed design changes to the Mill River Park and ultimately work with and change the built environment to support new programming and the community. The efforts of the second committee have

been delayed, however, because the number of simultaneous redevelopment projects that the city is implementing has slowed the rate at which changes to the park will be funded.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Once the city officials—the mayor, the local health department, the director of planning, and consultants—involved residents, a wide range of perspectives informed decision-making about Westside redevelopment. These included resident senior citizens, housing facilities tenant councils, community leaders, city workers who live on the Westside, the local health officer, health educators, a health inspector, and representatives from the social services department. The health department played an instrumental role in engaging the community initially, through collecting and sharing local data. Later, the department continued its support by stepping back and providing money to support community-initiated requests for more programming. As Iton explained, “A lot of health departments would find it difficult to give up ownership, but our conclusion was that it was best to step back and give a few thousand dollars to build trust.”

“Community members appreciate locally relevant data. They don’t want the generic data about how kids are getting fat; they want to know about their own community.”

THE RESULTS

Healthy Change in Local Environments

According to Iton, the most significant change in the Westside is “the renewed sense of trust that has been fostered through this process.” The public health department now understands much better the community’s perspectives on health and nutrition. Because the project is still underway (with the second committee still not yet launched into action) the full impact of these efforts remains to be seen. Repeat survey assessments were planned for Summer 2004. Meanwhile, the programming committee’s organizing efforts are already paying off. The local YMCA has also donated funds to support programming in conjunction with the Mill River Park project. And a group of ladies (dressed in bright pink) regularly walk around the Mill

River corridor cleaning up the park while exercising and educating participants about the history of the river and parkway.

Research has demonstrated the powerful impact of peer encouragement on maintaining regular exercise. Interventions like walking groups that build social support for activity have been shown to increase physical activity, strength and flexibility and decrease body fat.¹ And if the mayors’ dreams come true, there may one day be a walking and biking path along the entire Mill River. This could also help residents keep active. Studies have shown that convenient access to walking paths and local facilities have been associated with increased physical activity.^{2,3} Convenient access and social support may just be the winning combination that keeps residents moving.

As the link between the built environment and health becomes clearer, the role of public health departments in promoting health by developing healthier communities will become increasingly instrumental. *The Role for Local Public Health Agencies in Land Use Planning and Community Design* outlines several important ways that public health agencies can influence the building of healthy communities, including facilitation of community dialogue, provision of epidemiological data and “use of the public health process to mobilize the community and raise community awareness.”⁴ Public Health departments have a critical role in supporting effective community interventions to increase physical activity, bridging the communication gap between community members and other government agencies, and laying a foundation for efforts to promote health by transforming the built environment.

WISDOM FROM EXPERIENCE

According to Iton, “Community members appreciate locally relevant data. They don’t want the generic data about how kids are getting fat; they want to

know about their own community. We have all these assumptions and forget about the basic needs of the community.” For those dedicated to changing the built environment, Iton advises, “Remember, the time scale of changes to the built environment is years, not weeks or months. Health and planning departments should look at community participation differently to involve community members at the earliest stages, not once plans have already been drawn up.” Perhaps the most powerful lesson that Iton has learned from the process is one about engaging the community and listening: “Prepare to give up ownership in favor of building trust because ultimately, if you want to see behavior change it has to come from within and you can’t impose it on people. If there is the slightest sense of imposition, it will be resisted. Focus on the community participatory process and understanding the community as fully as possible beforehand. Whatever structure or physical improvements you are planning to build is almost irrelevant. If people have mistrust and don’t believe in the process, then it will fail—whatever you’re trying to sell.”

LOOKING AHEAD

While current efforts are focused on enhancing Westside community resources already in place, city officials still hope to clean up Mill River Park. They hope to build on the foundation of trust now being established so down the road they can count on local support for future redevelopment efforts. Meanwhile the city is in the process of redeveloping a couple of

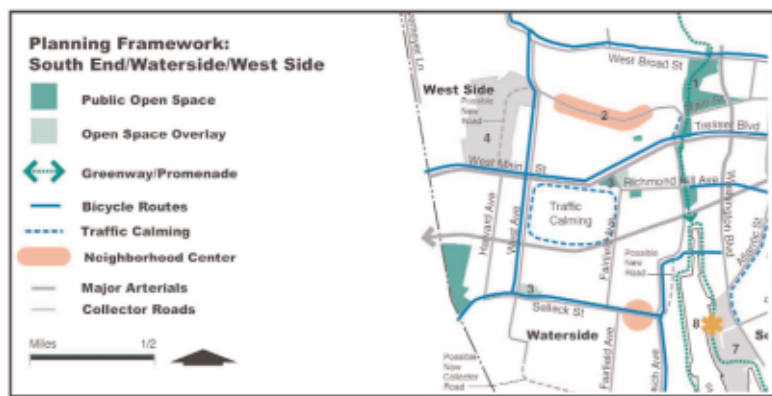
old properties, including one that burned down. The planning committee has not yet received funding to implement proposed changes, and the funding for the repeat assessments may be precarious. However, the cooperative efforts of Stamford officials and residents bode well for upcoming projects.

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WESTSIDE AND MILL RIVER PARK, STAMFORD, CT

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SEATTLE, WASHINGTON

The Seattle Department of Transportation works citywide to create pedestrian and bicycle infrastructures that promote safe physical activity

Maintaining a commitment to bicyclists and pedestrians is a challenge that faces transportation and planning professionals who must keep pace with increased demand for automobile travel in rapidly growing cities throughout the US. Despite these pressures, the Seattle Department of Transportation (SDOT) continues to establish safe, interconnected bicycle and pedestrian pathways to encourage walking and bicycling for both transportation and recreation, making Seattle a model for the nation. Through partnerships with local advocacy groups, the SDOT's bicycle and pedestrian programs sponsor both community and staff initiated projects and work to ensure equitable distribution of limited resources across the region. By building safe, pedestrian friendly walkways and converting abandoned rails into a comprehensive urban trail system, SDOT is helping to create a city that encourages physical activity and promotes safe, reasonable alternatives to automobile travel.

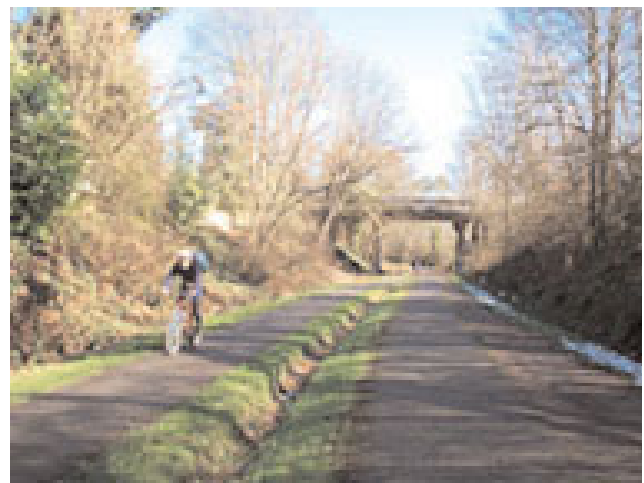
THE PLACE

Surrounded by water on three sides, built on six hills of lush greenery, and set against a backdrop of mountains, Seattle is deemed one of the most beautiful urban areas in the country. The city boasts over 28 miles of shared use paths, 22 miles of on-street, striped bike lanes, and about 90 miles of signed bike routes. Seattle's population of about 563,374 is predominantly White, 13% Asian, 8% African American and 5% Latino, according to the 2000 US Census. The SDOT

estimates that about 36% of Seattle residents bicycle for recreation, and anywhere from 4,000 to 8,000 people use their bikes to commute to work daily, depending on weather and time of year.

THE PROJECT

Seattle has long demonstrated its commitment to improve streets and sidewalks, reduce congestion, and facilitate walking and bicycling by creating a safe, interconnected system that links neighborhoods with key destinations. The primary means for this work are the city's pedestrian and bicycle programs managed by the SDOT. Program coordinator, Pete Lagerwey is proud of what they've been able to accomplish so far: "Among the big cities, we do really great things."



SEATTLE DEPARTMENT OF TRANSPORTATION IS WORKING TO COMPLETE A CITYWIDE BICYCLE NETWORK.



SEATTLE LAW REQUIRES THAT AN ARTS COMMISSION PROVIDE INPUT ON AESTHETICS, LANDSCAPING AND ART FOR ALL PEDESTRIAN PROJECTS.

The pedestrian program promotes walkability by building accessible sidewalk ramps; installing and maintaining school-crossing signs, marked crosswalks, and sidewalks; constructing features that increase pedestrian safety and visibility at curbs and crossing islands; providing walking maps for Seattle's 60 public elementary schools; and identifying and responding to pedestrian safety concerns. The program has a broad purview that includes assessing and maintaining over 700 intersections, implementing both small- and large-scale pedestrian projects, making more than 300 improvements at spot locations throughout the city, and overseeing the gradual implementation of neighborhood plans developed by community residents in the late 1990's. Among the 37 neighborhood plans that were introduced by residents between 1996 and 1998 and adopted through City Council resolution from 1998 to 2000, 35 identified pedestrian issues of paramount importance, sending a strong, clear message to the SDOT that pedestrian safety is a top priority for neighborhood residents.

The scope of the bicycle program is equally broad. Its mission is to implement a comprehensive urban trail system that connects

"We'll bring testimonials from other people who've had trails built near them, we'll show real-estate advertisements which routinely boast 'proximity to trail' and try to give presentations that will help people overcome their fears."

the corners of the city with downtown. By converting abandoned rails into trails the city provides access to recreational activities, promotes bicycling as a viable transportation option, and links neighborhoods, parks, and open spaces throughout Seattle. This rails-to-trails system represents a longstanding goal to transform the city into a bike-friendly environment. In 1989, Lagerwey was involved in the negotiation process with the transcontinental rail system, Burlington Northern, that made it possible for SDOT to gain control of rail corridors as the company shut down rail lines.

The citywide bus system helps further these goals by offering free rides throughout downtown. This system provides a valuable service to the significant portion of downtown residents who commute to work on foot or by bike.

Despite Seattle's major infrastructure, policy, and programmatic strides toward a more pedestrian- and bike-friendly environment, this progress has been hard-won. "Nothing's easy; it's all difficult," said Lagerwey, who offered up one example. "In making transitions from rail corridors to trails, we have NIMBYs (Not In My Back Yard residents) that don't like the bike paths because they fear change, that they will hurt property values or result in crime. So, for every project, we'll bring testimonials from other people who've had trails built near them, we'll show real-estate advertisements which routinely boast 'proximity to trail' and try to give presentations that will help people overcome their fears. These presentations work well for people who are on the fence but don't change the adamant opposers. Still, we've never lost a trail because of NIMBYism. In the 1980's we did a phone survey interviewing residents adjacent to trails, tracked real estate values, monitored crime rates, and found that the trails have been overwhelmingly positive in terms of these factors as well as community building."

Funding can also be an issue, especially in a tight economy, Lagerwey explained. Working with the Fire Marshall is an on-going challenge because the fire department

frowns on traffic calming devices and anything that might narrow the streets. Staffing and time are often short; with just five people on staff, the bike and pedestrian programs at SDOT can't touch everything in a city as big as Seattle.

Despite these challenges, these programs stand out for their integrated approach to making healthy changes to urban environments. By partnering with local advocacy groups, responding to citizen groups and neighborhood plans, seeking review and comment from pedestrian and bicycle advisory boards, and conducting systematic inventories of neighborhoods, SDOT has worked to ensure equal distribution of limited resources for the greatest overall good.

Lagerwey notes that his programs are always “very concerned about social equity, so they have to balance being responsive while distributing resources fairly. If we based our decision-making entirely on an ‘inbox approach’ we’d be missing part of the picture, so we also have to use a systems approach.” For example, some residents may not feel comfortable calling authorities, so SDOT is careful to look closely at neighborhoods with the following characteristics to assess crash probability and to ensure equity across SDOT projects:

- high concentrations of immigrant populations
- walking seniors
- neighborhoods that are poor
- communities with the most kids
- intersections with high pedestrian usage or crash rates

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Community input and citizen participation in SDOT programming, planning and implementation of walking and biking projects occurs through several different mechanisms. Institutionally, SDOT utilizes two mayor-appointed boards, a pedestrian advisory board,

By converting abandoned rails into trails the city provides access to recreational activities, promotes bicycling as a viable transportation option, and links neighborhoods, parks, and open spaces throughout Seattle.

and a bicycle advisory board, which meet once a month to review and comment on all major projects. These boards “look like the community, represented by men, women, people of color, young and old,” explained Lagerwey. “Every single month a speaker presents a project before the boards for review and commen-

tary. The boards have been very successful.” Through partnerships with Feet First, a pedestrian advocacy group, and Bicycle Alliance of Washington, SDOT also gets input from special interest groups and activists. In accordance with Seattle law, a design commission made up of community members and a full-time artist also provide input on aesthetic enhancements such as trees, landscaping, and public art installations for almost all large projects. The Arts Commission provides a “huge value in terms of safety, accessibility and aesthetics by integrating art into all capital improvement projects,” said Lagerwey.

SDOT also seeks resident input through official neighborhood groups and responds to individual calls from residents about neighborhood plans or specific locations of concern. In cases where members of SDOT staff identify safety-related issues, community members are informed of a proposed change through mailings or community meetings.



SAFE ROUTES TO SCHOOL ARE A PRIORITY FOR SEATTLE'S PEDESTRIAN PROGRAM.

THE RESULTS

Healthy Change in Local Environments

Walking and biking are known to be two important and popular forms of physical activity that are linked to improved cardiovascular health and reduced risks of diabetes and obesity. However, Lagerwey does not jump to quick conclusions about whether or not SDOT's bicycle and pedestrian work is correlated with increased physical activity or reduced injuries. He is clear that "in a macro sense we know what causes crashes and what prevents them, and we believe that by replicating these things throughout the city—like good walking routes and improvements at spot locations—that we've begun to have an overall impact." In 2003, the American Podiatric Medical Association (APMA) rated Seattle among the nation's top ten walking cities. The association's criteria included the number of people walking to work daily, air quality, number of parks, crime rates, dangers to pedestrians, and the availability of products, services, and amenities to serve pedestrians. While it is difficult to show causality and what came first, Seattle does have high "journey-to-work" rates via bike and foot, while maintaining low pedestrian fatalities (about one every ten years). Clearly this is indicative of an effective design that encourages and enables people to walk safely.

After nearly 15 years of negotiations, SDOT has now acquired 100% of the rail corridors needed to complete the bike trail system which is now two-thirds complete, with about \$12 million worth of projects in the pipeline and another \$25 to \$30 million needed to complete the citywide system.

The SDOT is comparing 1990 and 2000 census data. Nevertheless, it will be "hard to draw direct correlations," said Lagerwey, because Seattle's population has boomed over the decade. As SDOT builds up the bike trail system and connects long stretches of trail from industrial parts of town to the trail network, bike traffic increases significantly. "We get thousands of bicyclists, and then we are faced

SDOT has now acquired 100% of the rail corridors needed to complete the bike trail system which is now two-thirds complete.



SEATTLE BOASTS OVER 28 MILES OF SHARED USE PATHS THAT FACILITATE WALKING AND BIKING THROUGHOUT THE CITY.

with the decision to not widen trails because we don't want to destroy the reasons why people enjoy riding on them, either," said Lagerwey.

Although Seattle-specific impact studies have yet to be done, research suggests that improvements can increase health-promoting physical activity. Studies show that rates of walking and cycling have been positively correlated with neighborhood and environmental factors such as availability of walking paths and bicycle paths, the presence of highly connected pathways, and proximity to trails.¹ In *Environmental Factors Associated with Adults' Participation in Physical Activity*, Humpel et al. review quantitative studies that examine the relationship between features of the physical environment and activity among adults. The researchers found evidence for an association between convenience of, and access to, local facilities and activity.² In a study of 3,392 adults by Ball et al., perceptions of neighborhood convenience and attractiveness were associated with walking.³ Booth et al. studied over 2,000 older adults and similarly found that when footpaths were perceived as safe and accessible, participants were more likely to be active.⁴

Data also suggest that neighborhood level changes to the environment that slow traffic can prevent injuries. A systematic review

and meta-analysis by Bunn et al. in 2003 provides evidence that traffic calming strategies can prevent traffic-related injuries.⁵ In their article, “Creating a Healthy Environment: The Impact of the Built Environment on Public Health,” Jackson and Kochtitzky explain, “People are more likely to use parks, paths and bikeways when they are easy to get to and are safe and well-maintained.” The authors also explain that there are “several regulatory and design strategies that can be applied to make communities safer for both child and adult pedestrians and bicyclists.”⁶ Existing evidence suggests that improving access to a highly interconnected system of bike and walking paths throughout the community is likely to promote physical activity and prevent injuries among residents.

WISDOM FROM EXPERIENCE

Lagerwey shared some of his secrets for success: “When you develop a successful program, use it as a model to avoid reinventing the wheel. Balance outcomes and products, select long-term, medium-term, and short-term projects and do some of each in parallel so that things get done within time cycles, like city council terms. Give attention to the 3 P’s—policies, programs, and projects.” And finally: “Work to benefit all the pedestrians and cyclists, don’t spend all the time on one location; focus on systems issues.”

LOOKING AHEAD

SDOT continually reviews neighborhood plans and prioritizes projects for each year, while identifying new small and large projects on an ongoing basis. SDOT will continue to transform the remaining third of the rail corridors to link with the bicycle trail network. Recently, SDOT along with Feet First and the King County Department of Public Health, were the recipients of a Robert Wood Johnson Foundation Leadership for Active Living Grant to improve infrastructure and implement a public education and health promotion project in several communities over the next four years. All signs point to continued success of SDOT’s programs that encourage residents and visitors

to take advantage of Seattle’s natural beauty through health-enhancing walking and biking paths that provide safe and pleasant routes to all corners of the city.

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WRAY, COLORADO

The Wray Health Initiative builds exercise facilities and makes fitness fun for people of all ages

In the rural town of Wray, Colorado a group of concerned citizens and health care providers called the Wray Health Initiative (WHI) became motivated to support resident participation in physical activity. Building a state-of-the-art recreation facility was necessary, but it also needed an infusion of participants. A decade after they had collaborated to build a 24,000 square foot fitness and rehabilitation center, facility use was not what had been expected, so the group kicked into gear and launched a multi-pronged community health outreach program that would create outdoor facilities and help residents find the fun in fitness. With a special emphasis on heart health, WHI built recreation facilities, sponsored contests and hosted public events that would encourage regular exercise in a community context. Three years later, WHI reports significant community health improvements, including three

times as many people participating in community-based walking programs and regular use of newly built indoor and outdoor fitness and recreation facilities.

THE PLACE

Wray, Colorado, 170 miles from Denver, sits in a scenic valley beside the banks of the North Fork of the Republican River just 13 miles from the point where Colorado, Kansas and Nebraska meet. A long range of grassy sandhills stretches north of the city. Wray is 90 miles away from any large towns and at least 2.5 hours away from a large medical facility. It is a hilly, rural town with no formal walking paths which makes it difficult for residents to find safe, convenient areas to walk outdoors. The population of 2,187 is predominantly White, with about 5% to 10% Latinos comprising the remainder, according to the 2000 US Census. Average income for residents is under \$25,000.

THE PROJECT

In the early 1990's, through donations and foundation grants, community-minded citizens built a 24,000 square foot, state-of-the-art rehabilitation center. The Wray Rehabilitation and Activity Center (WRAC) boasted a walking track, an indoor swimming pool, nautilus equipment and free weights, a racquetball court, physical therapy equipment, and a hot tub and steam room. "It was really something," says Jennifer Kramer, WHI chairperson. "The citizens of Wray thought it nearly impossible to build a facility of this caliber in our little town."



A COMMUNITY EVENT PROMOTES ACTIVITY IN THE COURTYARD OF THE WRAY REHABILITATION AND ACTIVITY CENTER.

The multi-purpose facility was open both to recovering cardiac patients and local residents through memberships. The goal of the WRAC was to provide a facility that all community members could afford to use. Memberships costs were intended to be low so that all residents could use it for exercise or physical therapy. But over time it became clear that the WRAC was underutilized. Patients were not following up with rehabilitation instructions from their medical care providers. WHI hoped that by increasing community involvement they could promote health and increase use of WRAC facilities. The group launched a new mission: to improve health in the community by increasing activity levels, conducting health assessments, and encouraging individual physical activity.

After submitting proposals in 1999, WHI received funding of \$330,000 over three years from the Rural Health Outreach Project and \$140,000 over two years from the Robert Wood Johnson Foundation. Their first step was to hire a coordinator to support patients' physical activity efforts and continue rehabilitation. Then, the WHI partners conducted an assessment around town to determine need. Through a series of focus groups that included health care providers, community groups, teens, local clubs, and senior citizens, WHI learned straight from residents what the community members wanted to see in their town. Special priority was placed on giving voice to Latino residents, who had historically been underrepresented in community decision-making. With straight-from-the-source information in hand, WHI better understood the community's perceived barriers to exercise and activity, began to identify specific community needs and used this information to implement community-identified solutions.

To increase opportunities for outdoor activity, WHI built a basketball court, updated playground equipment, enhanced a local walking path, and assisted with financing amenities at the new swimming facility in Wray. All of these physical changes were complement-

The facility use was not what had been expected, so the group kicked into gear and launched a multi-pronged community health outreach program that would help residents find the fun in fitness.

ed by efforts to build community awareness, increase social support for physical activity, and make exercise fun. Early on, WHI held a community-wide contest to involve residents in naming the project: "The idea was to begin engaging the community in what we were doing so they'd feel like a part of it right from the beginning," says Kramer. The WHI pro-

vided one-on-one health assessments with over 500 residents. The assessments gave personalized "recipes for success," including tailored dietary and exercise programs and let participants know how they compared to the national averages for flexibility, strength, weight, and osteoporosis. WHI coordinated walking clubs, 5K and 10K runs, a holiday marathon held between Thanksgiving and Christmas, moonlight golf, and a family fitness day to encourage intergenerational activity. The WRAC serves as a community gathering place during the Wray Health Fair, when about 400 to 500 residents visit booths, participate in screenings and learn more about health resources in the community.

Perhaps most popular and successful of all, WHI held a community event in which participants received a free pedometer and were encouraged to log their miles to "walk around the world" as a community. The participants achieved their goal so quickly that they changed the event's title to *WRAY Walks the World, to the Moon and Beyond*. Signs were posted around town showing collective progress. This program also engaged over 500 residents by giving them social support, pedometers, and other prizes as they publicly tracked the community's progress in walking "toward the moon."

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

Medical providers, city government, and local residents joined together and formed the Wray Health Initiative (WHI). A combination of federal funding from a Rural Health Outreach grant and support from

the Robert Wood Johnson Foundation helped to maintain the effort. The City of Wray, the WRAY Community District Hospital and the Wray Rehabilitation and Activity Center (WRAC) were the three key organizations involved in the initiative.

Jennifer Kramer, a cardiac re-habilitation nurse and assistant director of nurses serves as chairperson for WHI. Revae Parker, currently community services director for the City of Wray, was director of WRAC and served on the committee when the initiative began. A doctor committed to physical activity and nutrition and a senior citizen representing the community were also instrumental. The entire process from writing the grant to implementation was a collaborative effort. To get residents excited and involved in the effort, WHI sought community input from the beginning. From the outset, people knew what role they would play and shared a common vision for achieving their goals.

THE RESULTS

Healthy Change in Local Environments

Three years since the WHI launched its efforts to improve community health by increasing activity levels, the group reports significant improvements. Three times as many people now participate in community-based walking programs. Regular use of both indoor and outdoor fitness and recreation facilities has remained steady. The group has documented change with individual health assessments and rehabilitation success stories—including a diabetic man who lost 30 pounds and got his diabetes under control within six months. WHI also reports cultural changes in the community that support health. One example is the fact that two local restaurants became non-smoking facilities through WHI advocacy efforts. And now the local grocery store features the WHI logo, a symbol that has become synonymous with health, on heart-healthy items. In addition, a local business gives employees an extra 15 minutes during their breaks if they use the time to exercise and a large employer, the Oil & Gas Exploration Company, created a policy

allowing employees to use work time to work out. Meanwhile, the local trust, the Kitzmiller-Bales Trust, donated \$10,000 for pedometers for community members.

Data illustrating that physical activity improves cardiovascular health is robust. The Wray results are in line with available research strongly suggesting that improving access to exercise facilities and encouraging activity through community-wide campaigns can increase activity levels and promote fitness among community residents. A review of the published literature conducted by Humpel et al. in 2002 concluded that “the availability of, and access to, cycleways, footpaths, health clubs, and swimming pools were found to be associated with physical activity.”¹ Linenger et al. (despite noted limitations in the study design) found improvements in fitness among military personnel when new equipment was added to a gym, a women’s fitness center was opened and when policies allowed for release time for physical activity.² Based on a systematic review of published evidence, the Task Force on Community Preventive Services finds support for strongly recommending the “creation of, or enhanced access to, places for physical activity combined with informational outreach activities” to increase physical activity.³ The Task Force indicates that successful interventions include “creating walking trails, building exercise facilities, or providing access to nearby facilities”



SIGNS CHEER ON WRAY RESIDENTS AS THEY “WALK THE WORLD, TO THE MOON AND BEYOND” FOR A COMMUNITY-WIDE WALKING EVENT.

and that “many of these programs...offer health behavior education, risk factor screening, referrals to physicians...and support or buddy systems.”⁴

WISDOM FROM EXPERIENCE

Kramer strongly advises others to “start out with a collaborative group to get buy-in from a broader part of the community. Pick out stakeholders from the beginning so that you know what problems people face.” She also adds that “this program had a professional evaluator, who helped guide the activities by gathering data through surveys and focus groups, and the information taught partners a lot about what was working and what wasn’t. Don’t duplicate existing efforts: we tried hard to improve existing things, and if we identified things that weren’t there, then we worked to create and sustain those.” And most of all, says Kramer, “make activity fun!”

LOOKING AHEAD

Although initial efforts were well funded and quite successful, WHI has found, not surprisingly, that grant funding comes and goes. Without continued funding, it became impossible to pay the coordinator who was instrumental in conducting individual health assessments, identifying community members at high risk of heart attacks and providing cardiac patients with appropriate referrals and support to continue rehabilitation. Community members find it difficult to pay for the services provided by the WRAC, so the WHI continues to explore reimbursement options that will allow for the provision of preventive services and make such services affordable to the community.

Despite these challenges, the multifaceted efforts WHI launched have resulted in a changed culture among Wray residents and new norms among local employers and businesses. Furthermore, their work lays an important foundation for future collaboration between major community-serving organizations. With momentum from the WHI and matching funds from Colorado’s Department of Transportation and the City of Wray, a core group of residents and stake-

holders from the initial WHI are now working to build a new walking trail through Wray.

The new structures are also enduring assets to the community. The infrastructure changes, including the playground, basketball court, swimming pool, and updated walking path are all tangible results that continue to serve the community and provide support for physical activity among all Wray residents.

PROGRAM CONTACT

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PHILADELPHIA, PENNSYLVANIA

Mural Arts Program engages community members in murals that improve aesthetics and transform neighborhoods

“Murals work on a symbolic level, providing opportunities for communities to express concerns, values, and aspirations: their yearning to be free of violence and fear; their hope to create a better world for themselves and their children; their desire to remember those who were overcome or who overcame...They are our dreams manifest.”

—JANE GOLDEN, DIRECTOR MURAL ARTS PROJECT, FOREWORD *PHILADELPHIA MURALS AND THE STORIES THEY TELL*



IN SECRET BOOK, 1999.

Fervent in the belief that public art has the power to eradicate urban blight and create community change, Philadelphia’s Mural Arts Program (MAP) follows a community participatory model to transform graffiti-scarred walls into scenic views in diverse neighborhoods citywide. In the process of creating murals that feature portraits of community heroes, tell neighborhood stories or display abstract designs, MAP fosters connections among neighbors and forges new bonds between residents (including at-risk youth), professional artists, and mural funders. In addition to helping artists and residents collaborate to turn their artistic visions into reality, MAP offers art education programs citywide. MAP works alongside Philadelphia’s diverse communities to use public art to revitalize communities, promote education, and

support civic pride. MAP is responsible for the creation of over 2000 murals since the mid 1980’s.¹

THE PLACE

MAP operates primarily in low-income neighborhoods across Philadelphia, reaching residents of all races and ethnicities. As the popularity of murals increases and word spreads, murals are now being created in wealthier neighborhoods, as well. During the first five years of the program, murals were painted in largely African American communities. MAP later expanded to Latino communities and then to Asian and White communities, eventually encompassing the full diversity of Philadelphia’s population (1,479,339 as of the 2003 US Census): 42.6%

“People have an intuitive desire to have art around, and murals make art accessible. The program’s grassroots, bottom-up approach also works to empower residents for whom, oftentimes, art in their neighborhoods equates to an occasional billboard with alcohol and tobacco images.”



PHILADELPHIA MURALS AND THE STORIES THEY TELL

GOLDEN AND FELLOW ARTIST WORKING ON THE LEDGE WALL MURAL.

African American, 42.5% White, 8.5% Hispanic/Latino, 4.4% Asian, and 2% American Indian/Alaska Native.

THE PROJECT

MAP grew out of the city's Anti-Graffiti Network, which was launched by former Philadelphia Mayor Wilson Goode in 1984. Mural arts have historical roots in depicting significant social, political and cultural imagery and MAP continues this legacy. Today, MAP brings together community residents and grassroots organizations to arrive at consensus about what images should be painted in their own communities. MAP facilitates community listening sessions to identify common themes and unify community members around a subject for the mural that will be painted in their neighborhood. MAP became institutionalized within the city's Department of Recreation in 1996 and in this role, creates new partnerships between government agencies, educational institutions, corporations, and philanthropic foundations to bring murals to fruition.

Engaging the talent of approximately 170 artists, MAP completes an average of 100 projects a year, including mosaic (small pieces of colored glass or stone fit-

ted together), ceramic (hand painted and kiln fired ceramic tiles), and fresco (watercolors painted on wet plaster) murals. The program strives to serve as many neighborhoods as possible, without bias, and maintains a waiting list for art education and mural creation. As MAP Director Jane Golden observes, "People have an intuitive desire to have art around, and murals make art accessible. The program's grassroots, bottom-up approach also works to empower residents for whom, oftentimes, art in their neighborhoods equates to an occasional billboard with alcohol and tobacco images."

MAP has five main objectives:

1. To create murals that reflect and depict the culture, history, and vision of the communities in which they are created,
2. To develop long-term, sustainable collaborations with communities that engage partners in the mural design process,
3. To educate youth about visual art and foster youth development through offering high-risk students mentorship opportunities with professional artists,
4. To use murals and the mural design process as a tool for community engagement, blight remediation, neighborhood beautification, and demonstration of civic pride, and
5. To generate professional development opportunities for artists who are committed to working collaboratively in communities to create murals and visual art education projects.

Each new MAP undertaking begins with a call (or more recently a written application) from an interested community member. MAP then conducts a site visit to find a wall suitable for a mural: Is the wall relatively smooth? Does the wall have major defects that would disrupt the painting process? Is the wall free of water damage? And importantly, will people be able to view the entire image? MAP coordinates community meetings to discuss what themes and images the community would like to see captured in the mural's design.

MAP offers classes at recreation centers, homeless shelters, detention centers, and senior centers citywide, reaching out to all members of Philadelphia's communities. In an effort to engage the city's youth, MAP offers art instruction to more than 1,000 students, ages 8 to 18, at 36 sites throughout Philadelphia.

MAP engages community members in an inclusive process of brainstorming and may also show slides of other murals to help get the ball rolling.

“The program attempts to use art as a tool to examine neighborhood systems more globally,” says Golden, adding that she wants the art MAP creates to tell a story about the neighborhood. To the extent possible, MAP tries to connect its work with existing community efforts and murals are tailored to depict important messages. For example, anti-drug and anti-smoking murals sponsored by Philadelphia’s Department of Public Health were erected as part of larger anti-drug and anti-smoking campaigns.

MAP is a holistic program that works to engage the community in creating murals, not just at specific sites, but through mentorship and education aimed at nurturing new artists. MAP offers classes at recreation centers, homeless shelters, detention centers, and senior centers citywide, reaching out to all members of Philadelphia’s communities. In an effort to engage the city’s youth, MAP offers art instruction to more than 1,000 students, ages 8 to 18, at 36 sites throughout Philadelphia through *The Big Picture*, a year-round program that introduces students to the history and process

“Once the mural was complete...neighborhood youth began helping their elders keep the area in front of the mural clean...[s]ometimes designing and producing a local mural begins a process of social connection and political activism that previously did not exist.”

of mural painting. Lessons help students foster creative thinking skills and prepare them for applying these skills to the workforce by teaching them problem solving, critical thinking, and teamwork. The final element of the program is for students to design and paint a small mural.

Like other national arts projects, MAP must strive to convince government funders of the value of public art. “The program isn’t the police or the fire department and is seen as expendable,” explained Golden. Most murals are sponsored and funded by private foundations or corporations, and matching city funds with private dollars has been one key to MAP’s continued success.

Keeping up with success is another challenge. As more communities experience the benefits of murals, demand increases. With only a small staff and minimal resources, MAP struggles to meet expectations. “Success is a mixed blessing, a double-edged sword,” said Golden. “We want to ensure fairness by bringing art to different neighborhoods and utilizing the talents of a diverse group of artists.” MAP constantly strives to reach the neighborhoods and youth that need it most and to create art that will make a difference in their communities.



PHILADELPHIA MURALS AND THE STORIES THEY TELL

AN OCTAGONAL MURAL AT A COMMUNITY HEALTH CENTER.

THE PEOPLE

Diverse Partners Collaborate to Build Healthy Environments

With Golden at the helm, MAP is a truly collaborative program that brings together community residents and professional artists to produce public art. The program relies on collaborations with, and funding from, a variety of public and private sources, including the City of Philadelphia, corporations, foundations, and individuals. Community-based arts organizations, schools, and senior centers offer support by recruiting community members and providing sites for education programs. Sponsors of the education programs include

the City of Philadelphia, American Jewish Committee, The William Penn Foundation, Surdna Foundation, Knight Foundation, and Nathan Cummings Foundation. MAP also fosters artistic skills among people in prisons and detention centers, community youth and former graffiti artists who are committed to applying their skills to legal activity.

Matching city funds with private dollars has been one key to MAP's continued success.

THE RESULTS

Healthy Change in Local Environments

Since its inception, MAP has completed nearly 2,500 indoor and outdoor murals throughout the city, more than any other public art program in the nation. Murals not only transform neighborhoods, they often become the “heart of community revitalization,” revealing to residents the potential their neighborhoods have to be safe and beautiful. The pride murals generate frequently prompts further community development efforts, including economic and social welfare enhancements like cleaner streets, fewer billboards promoting unhealthy behaviors, and more city-sponsored youth programs. In Golden’s book, *Philadelphia Murals and the Stories They Tell*, mural documentarian Timothy Drescher describes his experience of meeting a woman in North Philadelphia, who said of one of MAP’s creations, “Without that mural, we wouldn’t *be* a community.” Drescher goes on to explain that “once the mural was complete...neighborhood youth began helping their elders keep the area in front of the mural clean... [s]ometimes designing and producing a local mural begins a process of social connection and political activism that previously did not exist.”

Mural creation also helps transform the lives of youth who participate in the program each year. In the process of mural building, youth often discover latent artistic talents as well as find new outlets for positive mental, physical, and social activity. Some may also be diverted from drugs and crime, and many young MAP employees have earned their General Education Diploma with program support.

Although published research on the impact of public art on health is limited, the installation of public art in one community was associated with improved sense of well-being and increased social connectedness.² A small body of literature suggests that art in healthcare settings can improve patient recovery times and provide therapeutic benefits.³ In the late 1990’s several reviews of arts programs sought to better understand the relationship between art and health and found some support for the notion that participating in art programs can improve health, perceived well-being, and resilience.⁴

The value of art for preventing violence, vandalism and graffiti has been hypothesized but not yet formally evaluated.⁵ There are numerous examples of public arts and public works programs that require inclusion of art on the basis that public art enhances quality of life, promotes community well-being, increases civic pride, and celebrates regional history.⁶ Art has been



COMMON THREADS: PHILADELPHIA'S TALLEST MURAL OCCUPIES AN 8-STORY WALL.

PHILADELPHIA MURALS AND THE STORIES THEY TELL

used as a tool for social change and community development in programs that seek to increase social connections, reduce social isolation, reduce delinquency and truancy among at-risk youth, and promote healing among institutionalized adults. Still, more research is needed to draw empirical conclusions about the influence of community art on positive health outcomes.^{7,8}

WISDOM FROM EXPERIENCE

Golden attributes MAP's success to its commitment to involving community partners, to promoting sustainability and consistently enhancing program effectiveness. "By creating projects in collaboration with others, creativity flourishes," she explained. "By using creativity and by doing a variety of projects in diverse neighborhoods MAP can reach people and contribute to neighborhood aesthetics and community transformation."

LOOKING AHEAD

MAP continues to contribute to aesthetic and social transformations in neighborhoods throughout Philadelphia. Given high demand, budgetary constraints and limited staffing, MAP currently uses a competitive process to determine where murals will be painted. MAP staff has produced books, calendars and other products to spread the stories and images of Philadelphia's murals and to help supplement private funding to support program operations. Community art is essential to creating public spaces that residents and passersby can enjoy and has the potential to stimulate activism and engagement. When the value of public art becomes more widely understood, programs like MAP will finally receive their long overdue recognition and public support.

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